

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.01.97
Test oil : ISO 4113
Combination No. : 9 400 087 479
Injection pump
Pump designation : PES6P120A720LS7257
: 0
EP type number : 9 400 087 086
Governor
Governor design. : RQV300...1050PA1029
: 4
Governor no. : 9 420 080 340
Cust. part No. : 0250742202

Customer-spec. information

Customer : MBB
Motor : OM 447 LA
Power KW : 257.6

TEST BENCH REQUIREMENTS

Inlet line : 4.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 047
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1 688 901 105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 075

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 21.00

Firing order : 6- 2- 4- 1- 5-
: 3

Phasing : 0-60-120-180-240
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.70
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 247.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
 cm³/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.30
 Tolerance mm : + 0.10

Del. quantity
 cm³/1000 strokes : 14.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 6.0

Spread
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 700
 guide sleeve
 travel mm : 5.45
 Tolerance mm : + 0.25

Rated speed rpm : 1050
 guide sleeve
 travel mm : 7.80
 Tolerance mm : + 0.10

Rated speed rpm : 300
 guide sleeve
 travel mm : 0.75
 Tolerance mm : + 0.25

Rated speed rpm : 500
 guide sleeve
 travel mm : 3.55
 Tolerance mm : + 0.25

Rated speed rpm : 1165
 guide sleeve
 travel mm : 9.45
 Tolerance mm : + 0.25

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1120

Rack travel in mm : 16.50
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
 Aneroid pressure
 hPa : 1100

Del. quantity
 cm³/1000 strokes : 247.5
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0

Spread
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 55.0
 tolerance degree : + 4.0

control lever
 position degree : 121.0
 tolerance degree : + 4.0

RATED SPEED
 rack travel mm : 12.70
 Rated speed rpm : 1095
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1170
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1300

LOW IDLE

control lever
 position degree : 82.0
 tolerance degree : + 4.0

control lever
position degree : 17.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.30
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 8.00

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.70
Tolerance mm : ± 0.10

Rated speed rpm : 1050
rack travel mm : 13.70
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1100
rack travel mm : 13.70
Tolerance mm : ± 0.10

Pressure hPa : -
Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 720
rack travel mm : 2.65
Tolerance mm : ± 0.15

Pressure hPa : 400
rack travel mm : 0.80
Tolerance mm : ± 0.10

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1100
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 242.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 123.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 235.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 14.0
Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : +- 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.01.97
Test oil : ISO 4113
Combination No. : 9 400 087 481
Injection pump
Pump designation : PES6P120A320/3RS3264
EP type number : 9 400 087 075
Governor
Governor design. : RQV350/870...900PA11
: 11
Governor no. : 9 420 080 356
Cust. part No. : 3355248

Customer-spec. information
Customer : CUMMINS
Motor : 6CTA
Power KW : 207.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 025
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1 688 901 105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 3.50
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Start of delivery blocking
°NW after s.o.d. : 8.00
Tolerance : ± 0.1C
Check
tolerance °NW : ± 0.23
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 870
Rack travel in mm : 12.65
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 223.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 6.20
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 10.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 700
guide sleeve
travel mm : 4.50
Tolerance mm : ± 0.10

Rated speed rpm : 910
guide sleeve
travel mm : 5.75
Tolerance mm : ± 0.25

Rated speed rpm : 250
guide sleeve
travel mm : 0.75
Tolerance mm : ± 0.25

Rated speed rpm : 400
guide sleeve
travel mm : 2.75
Tolerance mm : ± 0.25

Rated speed rpm : 980
guide sleeve
travel mm : 8.85
Tolerance mm : ± 0.25

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 945

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 870
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 223.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 56.0
tolerance degree : ± 4.0

control lever
position degree : 111.0
tolerance degree : ± 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 919
rack travel mm : 11.60

Rated speed rpm : 955
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1050

Rated speed rpm : 920
rack travel mm : 11.60

Rated speed rpm : 956
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1050

Rated speed rpm : 921
rack travel mm : 11.60

Rated speed rpm : 957
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1050

Rated speed rpm : 922
rack travel mm : 11.60

Rated speed rpm : 958
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1050

Rated speed rpm : 923
rack travel mm : 11.60

Rated speed rpm : 959
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1050

Rated speed rpm : 924
rack travel mm : 11.60

Rated speed rpm : 960
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1050

LOW IDLE

control lever
position degree : 73.0
tolerance degree : ± 4.0

control lever
position degree : 18.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 6.20
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 10.00

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 870
rack travel mm : 12.65
Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 12.65
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 270

Check
speed 1/min : > 80
Check
speed 1/min : < 290

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : ± 1.00
Del. quantity
cm³/1000 strokes : 285.0
Tolerance
cm³/1000 strokes : ± 10.0

Check tolerance
cm³/1000S. : +- 14.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 10.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.03.97
Test oil : ISO 4113
Combination No. : 9 400 087 482
Injection pump
Pump designation : PES6P120A320/3RS3264
EP type number : 9 400 087 075
Governor
Governor design. : RQV350/720...750PA11
: 12
Governor no. : 9 420 080 357
Cust. part No. : 3355249

Customer-spec. information
Customer : CUMMINS
Motor : 6CTA
Power KW : 180.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1 417 413 025
Inlet press. bar : 1.5
Test nozzle holder assembly : 1 688 901 105
Opening pressure bar : 208.5
Tolerance bar : + 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.50
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : + 0.50
Check tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 720

Rack travel in mm : 11.85
Tolerance mm : + 0.05

Del. quantity cm³/1000 strokes : 215.0

Tolerance cm³/1000 strokes : + 1.0

Check tolerance cm³/1000S. : + 4.0

Speed

Tolerance
 cm³/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.80
 Tolerance mm : + 0.10

Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 6.0

Spreed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 600
 guide sleeve
 travel mm : 4.50
 Tolerance mm : + 0.10

Rated speed rpm : 820
 guide sleeve
 travel mm : 8.25
 Tolerance mm : + 0.25

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.05
 Tolerance mm : + 0.25

Rated speed rpm : 420
 guide sleeve
 travel mm : 3.35
 Tolerance mm : + 0.25

Rated speed rpm : 770
 guide sleeve
 travel mm : 5.75
 Tolerance mm : + 0.25

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 805

Rack travel in mm : 16.50
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 720
 Aneroid pressure
 hPa : -

Del. quantity
 cm³/1000 strokes : 215.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0

Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 106.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 900

LOW IDLE

control lever
 position degree : 71.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
 rack travel mm : 5.80
 Tolerance mm : + 0.10

Rated speed rpm : 100
 CRT mm min. : > 10.00

Rated speed rpm : 365

TORQUE CONTROL

Rated speed rpm : 720
rack travel mm : 11.85
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 11.85
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 270

Check
speed 1/min : > 80
Check
speed 1/min : < 290

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 280.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000s. : \pm 14.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.01.97
Test oil : ISO 4113
Combination No. : 9 400 087 483
Injection pump
Pump designation : PES5P120A720LS7280
EP type number : 9 400 087 087
Governor
Governor design. : RQV300...950PA1029
Governor no. : 9 420 080 358
Cust. part No. : 0250744402

Customer-spec. information
Customer : MBB
Motor : OM 449 LA
Power KW : 184.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 047
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1 688 901 105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 075
Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 4.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 21.00
Firing order : 1- 3- 5- 4- 2
Phasing : 0-72-144-216-288
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 600
Rack travel in mm : 12.25
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 202.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000s. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300
Rack travel in mm : 5.10
Tolerance mm : +- 0.10
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 700
guide sleeve
travel mm : 5.45
Tolerance mm : +- 0.25

Rated speed rpm : 1050
guide sleeve
travel mm : 7.80
Tolerance mm : +- 0.10

Rated speed rpm : 300
guide sleeve
travel mm : 0.75
Tolerance mm : +- 0.25

Rated speed rpm : 500
guide sleeve
travel mm : 3.55
Tolerance mm : +- 0.25

Rated speed rpm : 1165
guide sleeve
travel mm : 9.45
Tolerance mm : +- 0.25

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1120

Rack travel in mm : 16.50
Tolerance mm : +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 202.5
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 52.0
tolerance degree : +- 4.0

control lever
position degree : 117.0
tolerance degree : +- 4.0

RATED SPEED
rack travel mm : 11.20
Rated speed rpm : 1005
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 1115
Tolerance 1/min : +- 15

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 80.0
tolerance degree : +- 4.0

control lever
position degree : 15.0
tolerance degree : +- 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.10
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 8.00

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 12.25
Tolerance mm : ± 0.05

Rated speed rpm : 950
rack travel mm : 12.25
Tolerance mm : ± 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 12.25
Tolerance mm : ± 0.05

Pressure hPa : -
Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 600
rack travel mm : 2.00
Tolerance mm : ± 0.10

Pressure hPa : 360
rack travel mm : 0.55
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check speed 1/min : > 80
Check speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 206.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 116.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 250.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.01.97
Test oil : ISO 4113

Combination No. : 9 400 087 484

Injection pump
Pump designation : PES5P120A720LS7280
EP type number : 9 400 087 087

Governor
Governor design. : RQV300...1050PA1114
Governor no. : 9 420 080 361

Cust. part No. : 0240747602

Customer-spec. information

Customer : MBB
Motor : OM 449 A
Power KW : 184.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : +- 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : +- 1.0

Prestroke mm : 4.65
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10

Rack travel in mm : 21.00

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288
Tolerance : +- 0.50
Check
tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.30
Tolerance mm : +- 0.10

Del. quantity
cm3/1000 strokes : 194.0

Tolerance
cm3/1000 strokes : +- 1.0

Check tolerance
cm3/1000S. : +- 4.0

Speed

Tolerance
 cm³/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.30
 Tolerance mm : ± 0.10

Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : ± 3.0

Check tolerance
 cm³/1000S. : ± 6.0

Spread
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 700
 guide sleeve
 travel mm : 5.45
 Tolerance mm : ± 0.25

Rated speed rpm : 1050
 guide sleeve
 travel mm : 7.80
 Tolerance mm : ± 0.10

Rated speed rpm : 300
 guide sleeve
 travel mm : 0.75
 Tolerance mm : ± 0.25

Rated speed rpm : 500
 guide sleeve
 travel mm : 3.55
 Tolerance mm : ± 0.25

Rated speed rpm : 1165
 guide sleeve
 travel mm : 9.45
 Tolerance mm : ± 0.25

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1120

Rack travel in mm : 16.50
 Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
 Aneroid pressure
 hPa : 800

Del. quantity
 cm³/1000 strokes : 194.0
 Tolerance
 cm³/1000 strokes : ± 1.0

Check tolerance
 cm³/1000S. : ± 4.0

Spread
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 55.0
 tolerance degree : ± 4.0

control lever
 position degree : 121.0
 tolerance degree : ± 4.0

RATED SPEED
 rack travel mm : 11.10
 Rated speed rpm : 1110
 Tolerance 1/min : ± 5

rack travel mm : 4.00
 Rated speed rpm : 1170
 Tolerance 1/min : ± 15

rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1300

LOW IDLE

control lever
 position degree : 82.0
 tolerance degree : ± 4.0

control lever
position degree : 17.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.30
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 8.50

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 12.30
Tolerance mm : ± 0.10

Rated speed rpm : 1050
rack travel mm : 12.10
Tolerance mm : ± 0.10

Rated speed rpm : 800
rack travel mm : 13.10
Tolerance mm : ± 0.10

Rated speed rpm : 900
rack travel mm : 12.80
Tolerance mm : ± 0.10

Rated speed rpm : 950
rack travel mm : 12.50
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

2-stage LDA setting

Rated speed rpm : 600
Pressure hPa : 800

MEASUREMENT

Pressure hPa : 360
rack travel mm : -1.50
Tolerance mm : ± 0.10

Pressure hPa : 500
rack travel mm : -0.50
Tolerance mm : ± 0.10

Pressure hPa : 1080
rack travel mm : 0.25
Tolerance mm : ± 0.05

Pressure hPa : 1200
rack travel mm : 0.60
Tolerance mm : ± 0.10

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 250

Check
speed 1/min : > 80
Check
speed 1/min : < 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 196.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 1500
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 220.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 121.0
Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : +- 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 250.0
Tolerance
cm³/1000 strokes : +- 10.0
Check tolerance
cm³/1000S. : +- 14.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.01.97
Test oil : ISO 4113

Combination No. : 9 400 087 485

Injection pump
Pump designation : PES5P120A720LS7280
EP type number : 9 400 087 087

Governor
Governor design. : RQV300...950PA1029
Governor no. : 9 420 080 363

Cust. part No. : 0250744502

Customer-spec. information

Customer : MBB
Motor : OM 449 LA
Power KW : 220.7

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Test nozzle holder assembly : 1 688 901 105

Opening pressure bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.65
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10

Rack travel in mm : 21.00

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288
Tolerance : ± 0.50
Check tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.75
Tolerance mm : ± 0.05

Del. quantity cm³/1000 strokes : 263.5

Tolerance cm³/1000 strokes : ± 1.0

Check tolerance cm³/1000S. : ± 4.0

Speed

Tolerance cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.30
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 700
guide sleeve
travel mm : 5.45
Tolerance mm : ± 0.25

Rated speed rpm : 1050
guide sleeve
travel mm : 7.80
Tolerance mm : ± 0.10

Rated speed rpm : 300
guide sleeve
travel mm : 0.75
Tolerance mm : ± 0.25

Rated speed rpm : 500
guide sleeve
travel mm : 3.55
Tolerance mm : ± 0.25

Rated speed rpm : 1165
guide sleeve
travel mm : 9.45
Tolerance mm : ± 0.25

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1120

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure

hPa : 1300

Del. quantity
cm³/1000 strokes : 263.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 52.0
tolerance degree : ± 4.0

control lever
position degree : 117.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.70
Rated speed rpm : 995
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1125
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 83.0
tolerance degree : ± 4.0

control lever
position degree : 18.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.30
Tolerance mm : +- 0.10

Rated speed rpm : 100
CRT mm min. : > 9.00

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.75
Tolerance mm : +- 0.05

Rated speed rpm : 950
rack travel mm : 13.75
Tolerance mm : +- 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1300
rack travel mm : 13.75
Tolerance mm : +- 0.05

Pressure hPa : -
Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 800
rack travel mm : 2.85
Tolerance mm : +- 0.15

Pressure hPa : 480
rack travel mm : 0.90
Tolerance mm : +- 0.10

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check speed 1/min : > 80
Check speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1300
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 256.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 121.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 250.0
Tolerance
cm³/1000 strokes : +- 10.0
Check tolerance
cm³/1000S. : +- 14.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Spreed

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.01.97
Test oil : ISO 4113
Combination No. : 9 400 087 486
Injection pump
Pump designation : PES5P120A720LS7329
EP type number : 9 400 087 088
Governor
Governor design. : RQV300...1050PA1055
Governor no. : 9 420 080 337

Cust. part No. : 4750747002

Customer-spec. information

Customer : MBB
Motor : OM449LA
Power KW : 220.8

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 15.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 266.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300
Rack travel in mm : 6.00
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 14.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1100
guide sleeve
travel mm : 7.65
Tolerance mm : ± 0.25

Rated speed rpm : 300
guide sleeve
travel mm : 1.40
Tolerance mm : ± 0.20

Rated speed rpm : 500
guide sleeve
travel mm : 3.25
Tolerance mm : ± 0.25

Rated speed rpm : 900
guide sleeve
travel mm : 5.85
Tolerance mm : ± 0.25

Rated speed rpm : 1210
guide sleeve
travel mm : 9.55
Tolerance mm : ± 0.25

GUIDE SLEEVE POSITION

control lever
position degree : - 1

Rated speed rpm : 1140
Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 266.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 60.0
tolerance degree : ± 4.0

control lever
position degree : 115.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 14.10
Rated speed rpm : 1095
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1195
Tolerance 1/min : ± 15

rack travel mm : 0.75
Tolerance mm : ± 0.75
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 68.0
tolerance degree : ± 4.0

control lever
position degree : 13.0

tolerance degree : +- 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 6.00
Tolerance mm : +- 0.10

Rated speed rpm : 100

CRT mm min. : > 8.00

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 15.15
Tolerance mm : +- 0.05

Rated speed rpm : 700
rack travel mm : 15.15
Tolerance mm : +- 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1200
rack travel mm : 15.15
Tolerance mm : +- 0.05

Pressure hPa : -
Rated speed rpm : 600

MEASUREMENT

Rated speed rpm : 600
Pressure hPa : 820
rack travel mm : 3.85
Tolerance mm : +- 0.15

Pressure hPa : 500
rack travel mm : 1.30
Tolerance mm : +- 0.10

Start interLock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80

Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 269.5
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 133.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 260.0
Tolerance
cm³/1000 strokes : +- 10.0
Check tolerance
cm³/1000S. : +- 14.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 14.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.01.97
Test oil : ISO 4113

Combination No. : 9 400 087 487

Injection pump
Pump designation : PES6P120A720LS7176
: 0
EP type number : 0 412 726 869

Governor
Governor design. : RQV300...1050PA1142
Governor no. : 9 420 080 368

Cust. part No. :

Customer-spec. information

Customer : MBB
Motor : OM447 A
Power KW : 210.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 6- 2- 4- 1- 5-
: 3

Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 177.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
 cm³/1000 strokes : 5.0

 Check tolerance
 cm³/1000S. : 9.0

 Rated speed rpm : 300
 Rack travel in mm : 6.20
 Tolerance mm : ± 0.20
 Del. quantity
 cm³/1000 strokes : 13.0
 Tolerance
 cm³/1000 strokes : ± 3.0
 Check tolerance
 cm³/1000S. : ± 6.0
 Spreed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1100
 guide sleeve
 travel mm : 7.65
 Tolerance mm : ± 0.25
 Rated speed rpm : 300
 guide sleeve
 travel mm : 1.40
 Tolerance mm : ± 0.20
 Rated speed rpm : 500
 guide sleeve
 travel mm : 3.25
 Tolerance mm : ± 0.25
 Rated speed rpm : 900
 guide sleeve
 travel mm : 5.85
 Tolerance mm : ± 0.25
 Rated speed rpm : 1210
 guide sleeve
 travel mm : 9.55
 Tolerance mm : ± 0.25

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1140
 Rack travel in mm : 16.50
 Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
 Aneroid pressure
 hPa : 600
 Del. quantity
 cm³/1000 strokes : 177.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 59.0
 tolerance degree : ± 4.0
 control lever
 position degree : 114.0
 tolerance degree : ± 4.0
 RATED SPEED
 rack travel mm : 12.00
 Rated speed rpm : 1103
 Tolerance 1/min : ± 8
 rack travel mm : 4.00
 Rated speed rpm : 1185
 Tolerance 1/min : ± 15
 rack travel mm : 0.75
 Tolerance mm : ± 0.75
 Rated speed rpm : 1300

LOW IDLE

control lever
 position degree : 68.0
 tolerance degree : ± 4.0

control lever
position degree : 13.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 6.20
Tolerance mm : ± 0.20

Rated speed rpm : 100

CRT mm min. : > 8.00

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 12.75
Tolerance mm : ± 0.05

Rated speed rpm : 1050
rack travel mm : 13.05
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 13.05
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

2-stage LDA setting

Rated speed rpm : 600
Pressure hPa : 600

MEASUREMENT

Pressure hPa : 250
rack travel mm : -1.30
Tolerance mm : ± 0.10

Pressure hPa : 380
rack travel mm : -0.40
Tolerance mm : ± 0.10

Pressure hPa : 690

Pressure hPa : 770
rack travel mm : 0.30
Tolerance mm : ± 0.10

Start interlock

B02

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80

Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 182.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0

Aneroid pressure
hPa : 1000
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 186.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 132.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.01.97
Test oil : ISO 4113

Combination No. : 9 400 087 488

Injection pump
Pump designation : PES6P120A720RS3338
EP type number : 9 400 087 089

Governor
Governor design. : RQV350...1150PA923
: K
Governor no. : 9 420 030 370

Cust. part No. :

Customer-spec. information

Customer : YULIN
Motor : FNH 7.8L
Power KW : 179.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 072

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

B04

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 2.40
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 13.65
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 166.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
 cm³/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.60
 Tolerance mm : + 0.10

Del. quantity
 cm³/1000 strokes : 29.5
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 5.0

Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 450
 guide sleeve
 travel mm : 3.90
 Tolerance mm : + 0.10

Rated speed rpm : 1200
 guide sleeve
 travel mm : 9.60
 Tolerance mm : + 0.10

Rated speed rpm : 1000
 guide sleeve
 travel mm : 7.90
 Tolerance mm : + 0.10

Rated speed rpm : 800
 guide sleeve
 travel mm : 6.60
 Tolerance mm : + 0.20

Rated speed rpm : 350
 guide sleeve
 travel mm : 2.35
 Tolerance mm : + 0.15

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150

B05

Aneroid pressure
 hPa : 900

Del. quantity
 cm³/1000 strokes : 166.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0

Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 68.0
 tolerance degree : + 4.0

control lever
 position degree : 118.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.60
 Rated speed rpm : 1215
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1350
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1450

LOW IDLE

control lever
 position degree : 64.0
 tolerance degree : + 4.0

control lever
 position degree : 14.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
 rack travel mm : 5.60
 Tolerance mm : + 0.10

Rated speed rpm : 275

CRT mm min. : > 6.90

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 13.65
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 12.20
Tolerance mm : ± 0.10

Rated speed rpm : 550
rack travel mm : 11.20
Tolerance mm : ± 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1150
Pressure hPa : 900
rack travel mm : 13.65
Tolerance mm : ± 0.05

Pressure hPa : -
Rated speed rpm : 1150
rack travel mm : 8.20
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 1150
Pressure hPa : 635
rack travel mm : 12.70
Tolerance mm : ± 0.20

Pressure hPa : 365
rack travel mm : 9.65
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 290

Check speed 1/min : > 80
Check speed 1/min : < 310

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 168.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 106.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.00
Tolerance mm : ± 0.40
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 29.5
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.01.97
Test oil : ISO 4113

Combination No. : 9 400 087 489

Injection pump
Pump designation : PES6P120A720RS3338
EP type number : 9 400 087 089

Governor
Governor design. : RQV350...1150PA923
: K
Governor no. : 9 420 080 371

Cust. part No. :

Customer-spec. information
Customer : YULIN
Motor : FNH 7.8L
Power KW : 156.6

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 072

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.40
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 13.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 159.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
 cm³/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.70
 Tolerance mm : + 0.10

Del. quantity
 cm³/1000 strokes : 29.5
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 5.0

Speed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 450
 guide sleeve
 travel mm : 3.90
 Tolerance mm : + 0.10

Rated speed rpm : 1200
 guide sleeve
 travel mm : 9.60
 Tolerance mm : + 0.10

Rated speed rpm : 1000
 guide sleeve
 travel mm : 7.90
 Tolerance mm : + 0.10

Rated speed rpm : 800
 guide sleeve
 travel mm : 6.60
 Tolerance mm : + 0.20

Rated speed rpm : 350
 guide sleeve
 travel mm : 2.35
 Tolerance mm : + 0.15

GUIDE SLEEVE POSITION

control lever
 position degree : - 1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
 Aneroid pressure
 hPa : 900

Del. quantity
 cm³/1000 strokes : 159.5
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0

Speed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 71.0
 tolerance degree : + 4.0

control lever
 position degree : 121.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.50
 Rated speed rpm : 1215
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1350
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1420

LOW IDLE

control lever
 position degree : 65.0
 tolerance degree : + 4.0

control lever
 position degree : 16.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.70
Tolerance mm : +- 0.10

Rated speed rpm : 275

CRT mm min. : > 6.70

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 13.55
Tolerance mm : +- 0.05

Rated speed rpm : 750
rack travel mm : 12.50
Tolerance mm : +- 0.10

Rated speed rpm : 550
rack travel mm : 11.50
Tolerance mm : +- 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1150
Pressure hPa : 900
rack travel mm : 13.55
Tolerance mm : +- 0.05

Pressure hPa : -
Rated speed rpm : 1150
rack travel mm : 8.70
Tolerance mm : +- 0.20

MEASUREMENT

Rated speed rpm : 1150

Pressure hPa : 500
rack travel mm : 12.40
Tolerance mm : +- 0.20

Pressure hPa : 300
rack travel mm : 10.15
Tolerance mm : +- 0.05

Start interlock

Rated speed rpm : > 100

Rated speed rpm : < 290

Check speed 1/min : > 80

Check speed 1/min : < 310

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 900

Rated speed rpm : 750

Del. quantity cm3/1000 strokes : 168.0

Tolerance cm3/1000 strokes : +- 3.0

Check tolerance cm3/1000s. : +- 6.0

Spread

Tolerance cm3/1000 strokes : 8.0

Check tolerance cm3/1000s. : 12.0

Aneroid pressure hPa : -

Rated speed rpm : 500

Del. quantity cm3/1000 strokes : 108.5

Tolerance cm3/1000 strokes : +- 2.0

Check tolerance cm3/1000s. : +- 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.00

Tolerance mm : +- 0.40

Del. quantity cm3/1000 strokes : 170.0

Tolerance cm3/1000 strokes : +- 20.0

Check tolerance cm3/1000s. : +- 24.0

LOW IDLE

Rated speed rpm : 350

Del. quantity cm3/1000 strokes : 29.5

Tolerance cm3/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.01.97
Test oil : ISO 4113
Combination No. : 9 400 087 491
Injection pump
Pump designation : PE6P120A720RS3069
EP type number : 0 411 826 712
Governor
Governor design. : RQV300...1000PA1164
Governor no. : 9 420 080 373

Cust. part No. :

Customer-spec. information
Customer : IVECO-ARGENTINA
Motor : IVECO 8210.22
Power KW : 224.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 046
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1 688 901 019
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 075
Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 3.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1000
Rack travel in mm : 12.55
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 208.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.00
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 800
guide sleeve
travel mm : 5.95
Tolerance mm : ± 0.25

Rated speed rpm : 1050
guide sleeve
travel mm : 8.70
Tolerance mm : ± 0.10

Rated speed rpm : 300
guide sleeve
travel mm : 1.35
Tolerance mm : ± 0.25

Rated speed rpm : 450
guide sleeve
travel mm : 2.95
Tolerance mm : ± 0.25

Rated speed rpm : 1150
guide sleeve
travel mm : 10.05
Tolerance mm : ± 0.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Aneroid pressure
hPa : 600

Del. quantity
cm³/1000 strokes : 208.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 63.0
tolerance degree : ± 4.0

control lever
position degree : 117.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.50
Rated speed rpm : 1045
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1140
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 68.0
tolerance degree : ± 4.0

control lever
position degree : 13.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 8.00
Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 12.55
Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 12.55
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 600
rack travel mm : 12.55
Tolerance mm : ± 0.05

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.80
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 210
rack travel mm : 10.50
Tolerance mm : ± 0.10

Pressure hPa : 280
rack travel mm : 11.75
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 600

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 211.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 131.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 200.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.01.97
Test oil : ISO 4113
Combination No. : 9 400 087 492
Injection pump
Pump designation : PES6P110A12ORS7214
EP type number : 0 412 716 805
Governor
Governor design. : RQV350...1100PA964
: 7K
Governor no. : 9 420 080 374
Cust. part No. : 3355823

Customer-spec. information
Customer : CUMMINS
Motor : 6CTAA-290
Power kW : 220.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1 417 413 047
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : + 1.5
Test lines : 1 680 750 008
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0
Prestroke mm : 4.40
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10
Rack travel in mm : 10.50
Tolerance mm : + 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
Tolerance : + 0.50
Check
tolerance °NW : + 0.75
Start of delivery blocking
°NW after s.o.d. : 6.00
Tolerance : + 0.10
Check
tolerance °NW : + 0.23
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900
Rack travel in mm : 13.95
Tolerance mm : + 0.05
Del. quantity
cm³/1000 strokes : 186.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.60
Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 43.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1200
guide sleeve
travel mm : 9.10
Tolerance mm : ± 0.10

Rated speed rpm : 350
guide sleeve
travel mm : 1.90
Tolerance mm : ± 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 3.20
Tolerance mm : ± 0.20

Rated speed rpm : 700
guide sleeve
travel mm : 6.10
Tolerance mm : ± 0.20

Rated speed rpm : 1400
guide sleeve
travel mm : 10.90
Tolerance mm : ± 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 186.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 116.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 13.65
Rated speed rpm : 1150
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1345
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 65.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 6.60
Tolerance mm : ± 0.20

Rated speed rpm : 275
CRT mm min. : > 6.50
Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 13.95
Tolerance mm : ± 0.05

Rated speed rpm : 1100
rack travel mm : 14.65
Tolerance mm : ± 0.05

Rated speed rpm : 700
rack travel mm : 12.90
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 1500
rack travel mm : 14.65
Tolerance mm : ± 0.05

Pressure hPa : -
Rated speed rpm : 1100
rack travel mm : 8.50
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 1100
Pressure hPa : 1200
rack travel mm : 14.30
Tolerance mm : ± 0.10

Pressure hPa : 600
rack travel mm : 10.45
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 240

Check
speed 1/min : > 80
Check
speed 1/min : < 250

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 185.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 1500
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 180.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 104.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.20
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 25.0

LOW IDLE

Rated speed rpm : 300

Del. quantity
cm³/1000 strokes : 43.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.01.97
 Test oil : ISO 4113
 Combination No. : 9 400 087 493
 Injection pump
 Pump designation : PES6P120A720LS7114
 : 3
 EP type number : 0 412 726 867
 Governor
 Governor design. : RQ300/1050PA911-5
 Governor no. : 9 420 080 375
 Cust. part No. : 0250747002

Customer-spec. information

Customer : MBB
 Motor : OM447 LA
 Power KW : 230.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1
 Test oil inlet
 temp. °C : 40
 Tolerance °C : ± 2.0
 Overflow valve : 1 417 413 047
 Inlet press. bar : 1.5
 Test nozzle holde
 assembly : 1 688 901 105
 Opening pressure
 bar : 208.5
 Tolerance bar : ± 1.5
 Test lines : 1 680 750 067
 Outside diameter : 6.0

x inside diameter : 3.0
 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
 Tolerance bar : ± 1.0
 Prestroke mm : 5.25
 Tolerance mm : ± 0.05
 Check
 tolerance mm : ± 0.10
 Rack travel in mm : 10.50
 Tolerance mm : ± 1.50
 Firing order : 6- 2- 4- 1- 5-
 : 3
 Phasing : 0-60-120-180-240
 Tolerance : ± 0.50
 Check
 tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 600
 Rack travel in mm : 12.40
 Tolerance mm : ± 0.10
 Del. quantity
 cm³/1000 strokes : 195.5
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 4.0
 Speed

Tolerance
 cm³/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.00
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 13.5
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 6.0
 Spreed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1100
 guide sleeve
 travel mm : 6.70
 Tolerance mm : + 0.20

Rated speed rpm : 300
 guide sleeve
 travel mm : 2.95
 Tolerance mm : + 0.15

Rated speed rpm : 600
 guide sleeve
 travel mm : 6.00
 Tolerance mm : + 0.10

Rated speed rpm : 1000
 guide sleeve
 travel mm : 6.40
 Tolerance mm : + 0.10

Rated speed rpm : 1175
 guide sleeve
 travel mm : 9.75
 Tolerance mm : + 0.25

GUIDE SLEEVE POSITION

control lever
 position degree : 109
 Rated speed rpm : 600

Rack travel in mm : 20.00
 Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
 Aneroid pressure
 hPa : 1050
 Del. quantity
 cm³/1000 strokes : 195.5
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 40.0
 tolerance degree : + 4.0

control lever
 position degree : 101.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.30
 Rated speed rpm : 1103
 Tolerance 1/min : + 8

rack travel mm : 4.00
 Rated speed rpm : 1165
 Tolerance 1/min : + 15

rack travel mm : 0.75
 Tolerance mm : + 0.75
 Rated speed rpm : 1300

LOW IDLE

control lever
 position degree : 74.0
 tolerance degree : + 4.0

control lever
position degree : 11.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 6.00
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 380
Tolerance 1/min : ± 20

Rated speed rpm : 100
CRT mm min. : > 9.00

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 12.40
Tolerance mm : ± 0.10

Rated speed rpm : 1050
rack travel mm : 12.40
Tolerance mm : ± 0.10

Rated speed rpm : 750
rack travel mm : 12.40
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

2-stage LDA setting

Rated speed rpm : 600
Pressure hPa : 1050

MEASUREMENT

Pressure hPa : 300
rack travel mm : -1.80
Tolerance mm : ± 0.10

Pressure hPa : 400
rack travel mm : -0.90
Tolerance mm : ± 0.10

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 195.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 198.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 126.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 230.0

Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 13.5
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.01.97
Test oil : ISO 4113

Combination No. : 9 400 087 496

Injection pump
Pump designation : PES6P120A320/3RS3264
EP type number : 9 400 087 075

Governor
Governor design. : RQV350...1100PA1206
Governor no. : 9 420 080 378

Cust. part No. : 3355762

Customer-spec. information
Customer : CUMMINS
Motor : 6CTA
Power KW : 190.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.50
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 9.00
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 10.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 186.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Reck travel in mm : 6.00
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 15.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 700
guide sleeve
travel mm : 5.05
Tolerance mm : + 0.25

Rated speed rpm : 1075
guide sleeve
travel mm : 7.60
Tolerance mm : + 0.10

Rated speed rpm : 350
guide sleeve
travel mm : 1.65
Tolerance mm : + 0.25

Rated speed rpm : 500
guide sleeve
travel mm : 3.45
Tolerance mm : + 0.25

Rated speed rpm : 1200
guide sleeve
travel mm : 9.30
Tolerance mm : + 0.20

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1150

Rack travel in mm : 16.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 186.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 60.0
tolerance degree : + 4.0

control lever
position degree : 115.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 9.80
Rated speed rpm : 1145
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1200
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 70.0
tolerance degree : ± 4.0

control lever
position degree : 15.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 10.00

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 10.85
Tolerance mm : ± 0.05

Rated speed rpm : 700
rack travel mm : 10.85
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 10.85
Tolerance mm : ± 0.05

Pressure hPa : -
Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 600
rack travel mm : 1.55
Tolerance mm : ± 0.15

Pressure hPa : 350

B25

rack travel mm : 0.50
Tolerance mm : ± 0.10

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 270

Check
speed 1/min : > 80
Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 184.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 111.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : ± 1.00
Del. quantity
cm³/1000 strokes : 280.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.01.97
Test oil : ISO 4113
Combination No. : 9 400 087 498
Injection pump
Pump designation : PES6P120A12ORS3344
EP type number : 9 400 087 090
Governor
Governor design. : RQV350...110DPA1216
Governor no. : 9 420 080 380

Cust. part No. : 3355978

Customer-spec. information
Customer : CUMMINS
Motor : 6 CTAA - 250
Power KW : 184.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 2 417 413 076
Inlet press. bar : 3.0
Test nozzle holder assembly : 1 688 901 019
Opening pressure bar : 208.5
Tolerance bar : + 1.5
Test lines : 1 680 750 008
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0
Prestroke mm : 4.15
Tolerance mm : + 0.05
Check tolerance mm : + 0.10
Rack travel in mm : 15.50
Tolerance mm : + 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
Tolerance : + 0.50
Check tolerance °NW : + 0.75
Start of delivery blocking
°NW after s.o.d. : 7.50
Tolerance : + 0.10
Check tolerance °NW : + 0.23
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100
Rack travel in mm : 14.55
Tolerance mm : + 0.05
Del. quantity cm³/1000 strokes : 184.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325

Rack travel in mm : 6.40
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 44.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 650
guide sleeve
travel mm : 5.55
Tolerance mm : ± 0.25

Rated speed rpm : 1150
guide sleeve
travel mm : 8.40
Tolerance mm : ± 0.10

Rated speed rpm : 350
guide sleeve
travel mm : 1.55
Tolerance mm : ± 0.25

Rated speed rpm : 500
guide sleeve
travel mm : 4.05
Tolerance mm : ± 0.25

Rated speed rpm : 1400
guide sleeve
travel mm : 10.55
Tolerance mm : ± 0.25

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1150

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 184.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 63.0
tolerance degree : ± 4.0

control lever
position degree : 117.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 13.50
Rated speed rpm : 1155
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1350
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 69.0
tolerance degree : ± 4.0

control lever
position degree : 14.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 325
rack travel mm : 6.40
Tolerance mm : ± 0.10

Rated speed rpm : 100
CRT mm min. : > 9.50

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 14.55
Tolerance mm : ± 0.05

Rated speed rpm : 700
rack travel mm : 14.55
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 14.55
Tolerance mm : ± 0.05

Pressure hPa : -
Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 680
rack travel mm : 0.85
Tolerance mm : ± 0.15

Pressure hPa : 530

C01

rack travel mm : 0.30
Tolerance mm : ± 0.10

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 255

Check
speed 1/min : > 80
Check
speed 1/min : < 275

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 184.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 144.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : ± 1.00
Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 44.0
Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : +- 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.02.97
 Test oil : ISO 4113
 Combination No. : 9 400 087 500
 Injection pump
 Pump designation : PES6P120A720LS7257
 : 0
 EP type number : 9 400 087 086
 Governor
 Governor design. : RQV300...950PA1242
 Governor no. : 9 420 080 387
 Cust. part No. : 0260746602

Customer-spec. information

Customer : MBB
 Motor : OM 447 LA
 Power kW : 264.8

TEST BENCH REQUIREMENTS

Inlet line : 4.1
 Test oil inlet
 temp. °C : 40
 Tolerance °C : ± 2.0
 Overflow valve : 1 417 413 047
 Inlet press. bar : 2.0
 Test nozzle holde
 assembly : 1 688 901 105
 Opening pressure
 bar : 208.5
 Tolerance bar : ± 1.5
 Test lines : 1 680 750 075
 Outside diameter : 8.0

C03

x inside diameter : 3.0
 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
 Tolerance bar : ± 1.0

Prestroke mm : 4.65
 Tolerance mm : ± 0.05
 Check
 tolerance mm : ± 0.10

Rack travel in mm : 21.00

Firing order : 6- 2- 4- 1- 5-
 : 3

Phasing : 0-60-120-180-240
 Tolerance : ± 0.30
 Check
 tolerance °NW : ± 0.50

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 14.25
 Tolerance mm : ± 0.05

Del. quantity
 cm³/1000 strokes : 275.5

Tolerance
 cm³/1000 strokes : ± 1.0

Check tolerance
 cm³/1000S. : ± 4.0

Spread

Tolerance
 cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300
Rack travel in mm : 5.50
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 16.5
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 700
guide sleeve
travel mm : 4.55
Tolerance mm : ± 0.25

Rated speed rpm : 1050
guide sleeve
travel mm : 7.70
Tolerance mm : ± 0.10

Rated speed rpm : 300
guide sleeve
travel mm : 0.75
Tolerance mm : ± 0.25

Rated speed rpm : 500
guide sleeve
travel mm : 3.45
Tolerance mm : ± 0.25

Rated speed rpm : 1165
guide sleeve
travel mm : 9.55
Tolerance mm : ± 0.25

GUIDE SLEEVE POSITION

control lever
position degree : - 1

Rated speed rpm : 1120
Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1300
Del. quantity
cm³/1000 strokes : 275.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 52.0
tolerance degree : ± 4.0

control lever
position degree : 117.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.60
Rated speed rpm : 1000
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1125
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1230

LOW IDLE

control lever
position degree : 82.0
tolerance degree : ± 4.0

control lever
position degree : 17.0

tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.50
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 9.20

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 14.25
Tolerance mm : + 0.05

Rated speed rpm : 950
rack travel mm : 13.65
Tolerance mm : + 0.05

Rated speed rpm : 750
rack travel mm : 14.25
Tolerance mm : + 0.05

Rated speed rpm : 840
rack travel mm : 13.90
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1300
rack travel mm : 14.25
Tolerance mm : + 0.05

Pressure hPa : -
Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 760
rack travel mm : 2.25
Tolerance mm : + 0.15

Pressure hPa : 500
rack travel mm : 0.90
Tolerance mm : + 0.10

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check speed 1/min : > 80

Check speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1300
Rated speed rpm : 950
Del. quantity cm³/1000 strokes : 245.5

Tolerance cm³/1000 strokes : + 2.0
Check tolerance cm³/1000s. : + 5.0

Spread Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000s. : 12.0

Aneroid pressure hPa : 1300
Rated speed rpm : 750
Del. quantity cm³/1000 strokes : 265.5

Tolerance cm³/1000 strokes : + 2.0
Check tolerance cm³/1000s. : + 5.0

Spread Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000s. : 12.0

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 146.5

Tolerance cm³/1000 strokes : + 1.0
Check tolerance cm³/1000s. : + 4.0

Spread Tolerance cm³/1000 strokes : 5.0
Check tolerance cm³/1000s. : 9.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 236.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 16.5
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.01.97
Test oil : ISO 4113

Combination No. : 9 400 087 501

Injection pump
Pump designation : PES5P120A720LS7280
EP type number : 9 400 087 087

Governor
Governor design. : RQV300...950PA1249
Governor no. : 9 420 080 389

Cust. part No. : 4750747302

Customer-spec. information
Customer : MBB
Motor : OM 449 LA-EURO I
Power KW : 220.7

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 21.00

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 263.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300
Rack travel in mm : 5.30
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 700
guide sleeve
travel mm : 5.45
Tolerance mm : + 0.25

Rated speed rpm : 1050
guide sleeve
travel mm : 7.80
Tolerance mm : + 0.10

Rated speed rpm : 300
guide sleeve
travel mm : 0.75
Tolerance mm : + 0.25

Rated speed rpm : 500
guide sleeve
travel mm : 3.55
Tolerance mm : + 0.25

Rated speed rpm : 1165
guide sleeve
travel mm : 9.45
Tolerance mm : + 0.25

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1120

Rack travel in mm : 16.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1300
Del. quantity
cm³/1000 strokes : 263.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 52.0
tolerance degree : + 4.0

control lever
position degree : 117.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.70
Rated speed rpm : 995
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1125
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 83.0
tolerance degree : + 4.0

control lever
position degree : 18.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.30
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 9.00

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.75
Tolerance mm : ± 0.05

Rated speed rpm : 950
rack travel mm : 13.75
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1300
rack travel mm : 13.75
Tolerance mm : ± 0.05

Pressure hPa : -
Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 800
rack travel mm : 2.85
Tolerance mm : ± 0.15

Pressure hPa : 480
rack travel mm : 0.90
Tolerance mm : ± 0.10

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check speed 1/min : > 80
Check speed 1/min : < 240

C09

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1300
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 256.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 121.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 250.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spread

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.01.97
Test oil : ISO 4113

Combination No. : 9 400 087 502

Injection pump
Pump designation : PES6P120A720LS7257
: 0
EP type number : 9 400 087 086

Governor
Governor design. : RGV300...950PA1262
Governor no. : 9 420 080 394

Cust. part No. : 0260749902

Customer-spec. information

Customer : MBB
Motor : OM 447 LA
Power KW : 301.6

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 21.00

Firing order : 6- 2- 4- 1- 5-
: 3

Phasing : 0-60-120-180-240
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 14.65
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 301.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance cm ³ /1000S.	: 9.0
--	-------

Rated speed rpm	: 300
Rack travel in mm	: 5.50
Tolerance mm	: +- 0.10
Del. quantity cm ³ /1000 strokes	: 17.0
Tolerance cm ³ /1000 strokes	: +- 3.0
Check tolerance cm ³ /1000S.	: +- 6.0
Spreed Tolerance cm ³ /1000 strokes	: 8.0
Check tolerance cm ³ /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 700
guide sleeve travel mm	: 5.45
Tolerance mm	: +- 0.25

Rated speed rpm	: 1050
guide sleeve travel mm	: 7.80
Tolerance mm	: +- 0.10

Rated speed rpm	: 300
guide sleeve travel mm	: 0.75
Tolerance mm	: +- 0.25

Rated speed rpm	: 500
guide sleeve travel mm	: 3.55
Tolerance mm	: +- 0.25

Rated speed rpm	: 1165
guide sleeve travel mm	: 9.45
Tolerance mm	: +- 0.25

GUIDE SLEEVE POSITION

control lever position degree	: - 1
----------------------------------	-------

Rated speed rpm	: 1120
Rack travel in mm	: 16.50
Tolerance mm	: +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 600
Aneroid pressure hPa	: 1400
Del. quantity cm ³ /1000 strokes	: 301.5
Tolerance cm ³ /1000 strokes	: +- 1.0
Check tolerance cm ³ /1000S.	: +- 4.0
Spreed Tolerance cm ³ /1000 strokes	: 5.0
Check tolerance cm ³ /1000S.	: 9.0

CONTROL LEVER

control lever position degree	: 52.0
tolerance degree	: +- 4.0

control lever position degree	: 118.0
tolerance degree	: +- 4.0

RATED SPEED

rack travel mm	: 13.60
Rated speed rpm	: 990
Tolerance 1/min	: +- 5

rack travel mm	: 4.00
Rated speed rpm	: 1130
Tolerance 1/min	: +- 15

rack travel mm	: 0.50
Tolerance mm	: +- 0.50
Rated speed rpm	: 1250

LOW IDLE

control lever position degree	: 82.0
tolerance degree	: +- 4.0

control lever position degree	: 17.0
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tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.50
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 8.50

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 14.65
Tolerance mm : ± 0.05

Rated speed rpm : 950
rack travel mm : 14.65
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 14.65
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1400
rack travel mm : 14.65
Tolerance mm : ± 0.05

Pressure hPa : -
Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 1000
rack travel mm : 2.75
Tolerance mm : ± 0.15

Pressure hPa : 660
rack travel mm : 1.00
Tolerance mm : ± 0.10

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check speed 1/min : > 80
Check speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1400
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 284.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 1400
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 293.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 146.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity
cm³/1000 strokes : 265.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000s. : ± 14.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000s. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.02.97
 Test oil : ISO 4113
 Combination No. : 9 400 087 503
 Injection pump
 Pump designation : PES5P120A720LS7280
 EP type number : 9 400 087 087
 Governor
 Governor design. : RQV300...950PA1263
 Governor no. : 9 420 08G 392
 Cust. part No. : 0270740102

Customer-spec. information
 Customer : MBB
 Motor : OM 449 LA-EUROII
 Power KW : 205.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1
 Test oil inlet temp. °C : 40
 Tolerance °C : ± 2.0
 Overflow valve : 1 417 413 047
 Inlet press. bar : 1.5
 Test nozzle holder assembly : 1 688 901 105
 Opening pressure bar : 208.5
 Tolerance bar : ± 1.5
 Test lines : 1 680 750 075
 Outside diameter : 8.0

C15

x inside diameter : 3.0
 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
 Tolerance bar : ± 1.0
 Prestroke mm : 4.65
 Tolerance mm : ± 0.05
 Check tolerance mm : ± 0.10
 Rack travel in mm : 21.00
 Firing order : 1- 3- 5- 4- 2
 Phasing : 0-72-144-216-288
 Tolerance : ± 0.50
 Check tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 600
 Rack travel in mm : 13.45
 Tolerance mm : ± 0.05
 Del. quantity cm³/1000 strokes : 253.0
 Tolerance cm³/1000 strokes : ± 1.0
 Check tolerance cm³/1000S. : ± 4.0
 Spreed
 Tolerance cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300
Rack travel in mm : 5.30
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 700
guide sleeve
travel mm : 5.45
Tolerance mm : ± 0.25

Rated speed rpm : 1050
guide sleeve
travel mm : 7.80
Tolerance mm : ± 0.10

Rated speed rpm : 300
guide sleeve
travel mm : 0.75
Tolerance mm : ± 0.25

Rated speed rpm : 500
guide sleeve
travel mm : 3.55
Tolerance mm : ± 0.25

Rated speed rpm : 1165
guide sleeve
travel mm : 9.45
Tolerance mm : ± 0.25

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1120

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 253.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 52.0
tolerance degree : ± 4.0

control lever
position degree : 117.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 12.10
Rated speed rpm : 1005
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1125
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1220

LOW IDLE

control lever
position degree : 83.0
tolerance degree : ± 4.0

control lever
position degree : 18.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.30
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 8.00

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 13.45
Tolerance mm : + 0.05

Rated speed rpm : 950
rack travel mm : 13.15
Tolerance mm : + 0.05

Rated speed rpm : 900
rack travel mm : 13.15
Tolerance mm : + 0.05

Rated speed rpm : 750
rack travel mm : 13.45
Tolerance mm : + 0.05

Rated speed rpm : 800
rack travel mm : 13.50
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.45
Tolerance mm : + 0.05

Pressure hPa : -
Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 700
rack travel mm : 1.75
Tolerance mm : + 0.15

Pressure hPa : 500

rack travel mm : 0.60
Tolerance mm : + 0.10

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 234.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 246.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 143.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 262.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.01.97
Test oil : ISO 4113

Combination No. : 9 400 087 504

Injection pump
Pump designation : PES5P120A720LS7280
EP type number : 9 400 087 087

Governor
Governor design. : RQV300...950PA1264
Governor no. : 9 420 080 393

Cust. part No. : 0270740002

Customer-spec. information
Customer : MBB
Motor : OM 449 LA-EURO I
Power KW : 235.4

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 21.00

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 14.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 286.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.10
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 10.5
Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 700
guide sleeve
travel mm : 5.45
Tolerance mm : + 0.25

Rated speed rpm : 1050
guide sleeve
travel mm : 7.80
Tolerance mm : + 0.10

Rated speed rpm : 300
guide sleeve
travel mm : 0.75
Tolerance mm : + 0.25

Rated speed rpm : 500
guide sleeve
travel mm : 3.55
Tolerance mm : + 0.25

Rated speed rpm : 1165
guide sleeve
travel mm : 9.45
Tolerance mm : + 0.25

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1120

C20

Rack travel in mm : 16.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1300

Del. quantity
cm³/1000 strokes : 286.5
Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 53.0
tolerance degree : + 4.0

control lever
position degree : 118.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.80
Rated speed rpm : 1010
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1130
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1220

LOW IDLE

control lever
position degree : 82.0
tolerance degree : + 4.0

control lever
position degree : 17.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.10
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 8.00

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 14.15
Tolerance mm : ± 0.05

Rated speed rpm : 950
rack travel mm : 13.85
Tolerance mm : ± 0.05

Rated speed rpm : 900
rack travel mm : 13.85
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 14.15
Tolerance mm : ± 0.05

Rated speed rpm : 800
rack travel mm : 14.15
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1300
rack travel mm : 14.15
Tolerance mm : ± 0.05

Pressure hPa : -
Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 940
rack travel mm : 2.35
Tolerance mm : ± 0.15

Pressure hPa : 600

rack travel mm : 0.70
Tolerance mm : ± 0.10

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80

Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1300
Rated speed rpm : 950

Del. quantity
cm³/1000 strokes : 264.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 5.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 1300
Rated speed rpm : 750

Del. quantity
cm³/1000 strokes : 280.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 5.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 149.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 265.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 10.5
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.01.97
Test oil : ISO 4113

Combination No. : 9 400 087 505

Injection pump
Pump designation : PE6P110A720RS3289-1
EP type number : 0 411 816 795

Governor
Governor design. : RSV350...1100P1A626
Governor no. : 9 420 082 332

Cust. part No. : 1377813

Customer-spec. information
Customer : SCANIA
Motor : DS1192A
Power KW : 186.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration
damper
(RoBo diaphragm) : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.35
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Beginning of delivery differende

and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 2.00

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 11.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 145.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 350

Rack travel in mm : 5.00
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 8.5
Tolerance
cm³/1000 strokes : ± 2.5
Check tolerance
cm³/1000S. : ± 5.0

Spread
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 700
Del. quantity
cm³/1000 strokes : 145.0

Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 49.0
tolerance degree : ± 4.0

control lever
position degree : 99.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.20
Rated speed rpm : 950
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 995
Tolerance 1/min : ± 15

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1070

LOW IDLE

control lever
position degree : 74.0
tolerance degree : ± 4.0

control lever
position degree : 24.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 4.50
Tolerance mm : ± 0.10

Testing:

Rated speed rpm : 350
rack travel mm : 5.00
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 430
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 11.25
Tolerance mm : + 0.05

Rated speed rpm : 600
rack travel mm : 11.30
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 11.25
Tolerance mm : + 0.05

Pressure hPa : -
Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 200
rack travel mm : 1.10
Tolerance mm : + 0.10

Pressure hPa : 150
rack travel mm : 0.35
Tolerance mm : + 0.05

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 148.5
Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 116.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : + 1.00
Del. quantity
cm³/1000 strokes : 255.0
Tolerance
cm³/1000 strokes : + 10.0
Check tolerance
cm³/1000S. : + 14.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 8.5
Tolerance
cm³/1000 strokes : + 2.5
Check tolerance
cm³/1000S. : + 5.0
Speed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.02.97
Test oil : ISO 4113

Combination No. : 9 400 087 506

Injection pump
Pump designation : PES6P120A320/3RS3365
EP type number : 9 400 087 092

Governor
Governor design. : RSV450...900P1A628
Governor no. : 9 420 082 333

Cust. part No. :

Customer-spec. information
Customer : CUMMINS
Motor : 6CTAAG
Power KW : 240.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.40
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 7.50
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 11.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 262.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 450

Rack travel in mm : 4.50

Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 5.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 262.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 59.0
tolerance degree : + 4.0

control lever
position degree : 109.0
tolerance degree : + 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 942
rack travel mm : 10.80

Rated speed rpm : 982
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1030

Rated speed rpm : 943
rack travel mm : 10.80

Rated speed rpm : 983
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1030

Rated speed rpm : 944
rack travel mm : 10.80

Rated speed rpm : 984
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50

Rated speed rpm : 1030

Rated speed rpm : 945
rack travel mm : 10.80

Rated speed rpm : 985
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1030

Rated speed rpm : 946
rack travel mm : 10.80

Rated speed rpm : 986
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1030

Rated speed rpm : 947
rack travel mm : 10.80

Rated speed rpm : 987
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1030

LOW IDLE

control lever
position degree : 81.0
tolerance degree : + 4.0

control lever
position degree : 31.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 450
rack travel mm : 4.00
Tolerance mm : + 0.10

Testing:

Rated speed rpm : 450
rack travel mm : 4.50

Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 485
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 11.85
Tolerance mm : + 0.05

Rated speed rpm : 550
rack travel mm : 11.85
Tolerance mm : + 0.05

Start interlock

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : + 1.00
Del. quantity
cm3/1000 strokes : 302.0
Tolerance
cm3/1000 strokes : + 10.0
Check tolerance
cm3/1000s. : + 14.0

LOW IDLE

Rated speed rpm : 450
Del. quantity
cm3/1000 strokes : 18.0
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000s. : + 6.0
Speed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000s. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.01.97
Test oil : ISO 4113
Combination No. : F 000 409 004
Injection pump
Pump designation : PES6P120A720RS3256
EP type number : 9 400 087 080
Governor
Governor design. : RQV350...1300PA1311
Governor no. : F 000 420 106

Cust. part No. : 0270748502

Customer-spec. information
Customer : MBB
Motor : OM 366 LA
Power KW : 139.8

TEST BENCH REQUIREMENTS

Inlet line : 4.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 047
Inlet press. bar : 2.0
Test nozzle holder
assembly : 1 688 901 019
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 075
Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 3.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 20.50
Tolerance mm : ± 0.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 11.15
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 148.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed

Tolerance
 cm³/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 7.50
 Tolerance mm : + 0.10

Del. quantity
 cm³/1000 strokes : 17.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 6.0

Spreed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1100
 guide sleeve
 travel mm : 6.45
 Tolerance mm : + 0.25

Rated speed rpm : 1350
 guide sleeve
 travel mm : 8.50
 Tolerance mm : + 0.10

Rated speed rpm : 350
 guide sleeve
 travel mm : 1.25
 Tolerance mm : + 0.25

Rated speed rpm : 650
 guide sleeve
 travel mm : 4.15
 Tolerance mm : + 0.25

Rated speed rpm : 1460
 guide sleeve
 travel mm : 9.55
 Tolerance mm : + 0.25

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1360

Rack travel in mm : 16.50
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 900

Del. quantity
 cm³/1000 strokes : 148.5
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0

Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 56.0
 tolerance degree : + 4.0

control lever
 position degree : 113.0
 tolerance degree : + 4.0

RATED SPEED
 rack travel mm : 10.20
 Rated speed rpm : 1355
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1460
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1570

LOW IDLE

control lever
 position degree : 80.0
 tolerance degree : + 4.0

control lever
position degree : 23.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 7.50
Tolerance mm : ± 0.10

Rated speed rpm : 100
CRT mm min. : > 10.50

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 11.15
Tolerance mm : ± 0.05

Rated speed rpm : 800
rack travel mm : 11.15
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 11.20
Tolerance mm : ± 0.10

Pressure hPa : -
Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 370
rack travel mm : 0.95
Tolerance mm : ± 0.15

Pressure hPa : 230
rack travel mm : 0.40
Tolerance mm : ± 0.10

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 270

Check
speed 1/min : > 80
Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 124.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 70.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 100.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.02.97
Test oil : ISO 4113
Combination No. : F 000 409 102
Injection pump
Pump designation : PES6P120A720LS7257
: 1
EP type number : F 000 400 201
Governor
Governor design. : RQV300...950PA1242
Governor no. : 9 420 080 387
Cust. part No. : 0270749402

Customer-spec. information

Customer : MBB
Motor : OM 447 LA
Power KW : 264.8

TEST BENCH REQUIREMENTS

Inlet line : 4.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 047
Inlet press. bar : 2.0
Test nozzle holder
assembly : 1 688 901 105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 075
Outside diameter : 8.0

D06

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 4.70
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 21.00
Firing order : 6- 2- 4- 1- 5-
: 3
Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BASIC SETTING

Rated speed rpm : 600
Rack travel in mm : 13.45
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 271.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.00
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 700
guide sleeve
travel mm : 4.55
Tolerance mm : + 0.25

Rated speed rpm : 1050
guide sleeve
travel mm : 7.70
Tolerance mm : + 0.10

Rated speed rpm : 300
guide sleeve
travel mm : 0.75
Tolerance mm : + 0.25

Rated speed rpm : 500
guide sleeve
travel mm : 3.45
Tolerance mm : + 0.25

Rated speed rpm : 1165
guide sleeve
travel mm : 9.55
Tolerance mm : + 0.25

GUIDE SLEEVE POSITION

control lever
position degree : - 1

D07

Rated speed rpm : 1120

Rack travel in mm : 16.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1300

Del. quantity
cm³/1000 strokes : 271.5
Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 52.0
tolerance degree : + 4.0

control lever
position degree : 117.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.20
Rated speed rpm : 1000
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1125
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1230

LOW IDLE

control lever
position degree : 81.0
tolerance degree : + 4.0

control lever
position degree : 16.0

tolerance degree : +- 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.00
Tolerance mm : +- 0.10

Rated speed rpm : 100

CRT mm min. : > 8.00

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 13.45
Tolerance mm : +- 0.05

Rated speed rpm : 950
rack travel mm : 13.15
Tolerance mm : +- 0.05

Rated speed rpm : 750
rack travel mm : 13.45
Tolerance mm : +- 0.05

Rated speed rpm : 900
rack travel mm : 13.15
Tolerance mm : +- 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1300
rack travel mm : 13.45
Tolerance mm : +- 0.05

Pressure hPa : -
Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 850
rack travel mm : 2.55
Tolerance mm : +- 0.15

Pressure hPa : 550
rack travel mm : 0.90
Tolerance mm : +- 0.10

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check speed 1/min : > 80
Check speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1300
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 250.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 1300
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 265.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 143.5
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 240.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000s. : ± 14.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000s. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.02.97
Test oil : ISO 4113
Combination No. : F 000 409 200
Injection pump
Pump designation : PES4A95D410RS2774
EP type number : 9 400 084 019
Governor
Governor design. : RQV30J...1300AB1321L
Governor no. : F 000 420 300
Cust. part No. : 0270745902

Customer-spec. information
Customer : MBB
Motor : OM 364 A
Power KW : 85.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 3.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 3- 4- 2
Phasing : 0-90-180-270

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 10.35
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 86.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 300
Rack travel in mm : 7.00
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 10.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1500
guide sleeve
travel mm : 8.55
Tolerance mm : + 0.05

Rated speed rpm : 300
guide sleeve
travel mm : 1.05
Tolerance mm : + 0.25

Rated speed rpm : 500
guide sleeve
travel mm : 2.55
Tolerance mm : + 0.25

Rated speed rpm : 750
guide sleeve
travel mm : 4.20
Tolerance mm : + 0.10

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1500

Rack travel in mm : 16.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 700
Del. quantity
cm³/1000 strokes : 86.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 59.0
tolerance degree : + 4.0

control lever
position degree : 108.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 9.30
Rated speed rpm : 1365
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1485
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1640

LOW IDLE

control lever
position degree : 68.0
tolerance degree : + 4.0

control lever
position degree : 19.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 7.00
Tolerance mm : + 0.10

Rated speed rpm : 100
CRT mm min. : > 8.00
Rated speed rpm : 485

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 10.35
Tolerance mm : ± 0.05

Rated speed rpm : 800
rack travel mm : 10.35
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 10.35
Tolerance mm : ± 0.05

Pressure hPa : -
Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 300
rack travel mm : 0.55
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check speed 1/min : > 80
Check speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 77.5
Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 53.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.30
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 84.0
Tolerance
cm³/1000 strokes : ± 6.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 10.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.02.97
Test oil : ISO 4113
Combination No. : F 000 409 201
Injection pump
Pump designation : PES6A95D410RS2918
EP type number : F 000 400 400
Governor
Governor design. : RQV300...1300AB1324
Governor no. : F 000 420 301

Cust. part No. : 3760747202

Customer-spec. information

Customer : MBB
Motor : OM 366 A
Power KW : 125.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1
Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : +- 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : +- 1.0
Prestroke mm : 3.05
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10
Rack travel in mm : 10.50
Tolerance mm : +- 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 11.25
Tolerance mm : +- 0.05
Del. quantity
cm3/1000 strokes : 81.0
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000S. : +- 3.0
Speed
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm³/1000s. : 8.0

Rated speed rpm : 300

Rack travel in mm : 9.20

Tolerance mm : +- 0.10

Del. quantity

cm³/1000 strokes : 19.0

Tolerance

cm³/1000 strokes : +- 2.0

Check tolerance

cm³/1000s. : +- 4.5

Spread

Tolerance

cm³/1000 strokes : 5.5

Check tolerance

cm³/1000s. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1500

guide sleeve

travel mm : 8.95

Tolerance mm : +- 0.05

Rated speed rpm : 300

guide sleeve

travel mm : 1.05

Tolerance mm : +- 0.25

Rated speed rpm : 500

guide sleeve

travel mm : 2.55

Tolerance mm : +- 0.25

Rated speed rpm : 750

guide sleeve

travel mm : 4.65

Tolerance mm : +- 0.10

GUIDE SLEEVE POSITION

control lever

position degree : - 1

Rated speed rpm : 1500

Rack travel in mm : 16.50

Tolerance mm : +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300

Aneroid pressure

hPa : 800

Del. quantity

cm³/1000 strokes : 81.0

Tolerance

cm³/1000 strokes : +- 1.0

Check tolerance

cm³/1000s. : +- 3.0

Spread

Tolerance

cm³/1000 strokes : 3.5

Check tolerance

cm³/1000s. : 8.0

CONTROL LEVER

control lever

position degree : 58.0

tolerance degree : +- 4.0

control lever

position degree : 111.0

tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 10.20

Rated speed rpm : 1365

Tolerance 1/min : +- 5

rack travel mm : 4.00

Rated speed rpm : 1505

Tolerance 1/min : +- 15

rack travel mm : 0.50

Tolerance mm : +- 0.50

Rated speed rpm : 1640

LOW IDLE

control lever

position degree : 76.0

tolerance degree : +- 4.0

control lever

position degree : 20.0

tolerance degree : +- 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 9.20
 Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 9.00

Rated speed rpm : 585

TORQUE CONTROL

Rated speed rpm : 1300
 rack travel mm : 11.25
 Tolerance mm : ± 0.05

Rated speed rpm : 750
 rack travel mm : 12.05
 Tolerance mm : ± 0.05

Rated speed rpm : 950
 rack travel mm : 11.50
 Tolerance mm : ± 0.05

Rated speed rpm : 800
 rack travel mm : 12.05
 Tolerance mm : ± 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
 Pressure hPa : 800
 rack travel mm : 12.00
 Tolerance mm : ± 0.05

Pressure hPa : -
 Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 550
 rack travel mm : 1.80
 Tolerance mm : ± 0.10

Pressure hPa : 350
 rack travel mm : 0.80
 Tolerance mm : ± 0.10

Start interlock

Rated speed rpm : > 100
 Rated speed rpm : < 250

Check speed 1/min : > 80
 Check speed 1/min : < 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 800
 Rated speed rpm : 800
 Del. quantity cm³/1000 strokes : 81.0
 Tolerance cm³/1000 strokes : ± 2.0
 Check tolerance cm³/1000S. : ± 4.0
 Spreed Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 8.0

Aneroid pressure hPa : -
 Rated speed rpm : 500
 Del. quantity cm³/1000 strokes : 42.5
 Tolerance cm³/1000 strokes : ± 1.0
 Check tolerance cm³/1000S. : ± 3.0
 Spreed Tolerance cm³/1000 strokes : 3.5
 Check tolerance cm³/1000S. : 8.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 13.50
 Tolerance mm : ± 0.10
 Del. quantity cm³/1000 strokes : 78.0
 Tolerance cm³/1000 strokes : ± 7.5
 Check tolerance cm³/1000S. : ± 10.0

LOW IDLE

Rated speed rpm : 300

Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.03.97
Test oil : ISO 4113
Combination No. : 9 400 085 393
Injection pump
Pump designation : PES4A95D410RS2887
EP type number : 9 400 084 040
Governor
Governor design. : RQV300...1300AB1311L
Governor no. : 9 420 080 390
Cust. part No. : 0260746802

Customer-spec. information
Customer : MBB
Motor : OM 364 LA/EURO I
Power KW : 100.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1-3-4-2
Phasing : 0-90-180-270

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 12.45
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 99.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 300
 Rack travel in mm : 8.30
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 5.5
 Check tolerance
 cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1500
 guide sleeve
 travel mm : 8.55
 Tolerance mm : + 0.05

 Rated speed rpm : 300
 guide sleeve
 travel mm : 1.05
 Tolerance mm : + 0.25

 Rated speed rpm : 500
 guide sleeve
 travel mm : 2.55
 Tolerance mm : + 0.25

 Rated speed rpm : 750
 guide sleeve
 travel mm : 4.20
 Tolerance mm : + 0.10

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1500

 Rack travel in mm : 16.50
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 700
 Del. quantity
 cm³/1000 strokes : 99.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 8.0

CONTROL LEVER

control lever
 position degree : 62.0
 tolerance degree : + 4.0

 control lever
 position degree : 111.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.40
 Rated speed rpm : 1345
 Tolerance 1/min : + 5

 rack travel mm : 4.00
 Rated speed rpm : 1515
 Tolerance 1/min : + 15

 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1640

LOW IDLE

control lever
 position degree : 73.0
 tolerance degree : + 4.0

 control lever
 position degree : 22.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 8.30
 Tolerance mm : + 0.10

Rated speed rpm : 100
CRT mm min. : > 10.20
Rated speed rpm : 415

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 12.45
Tolerance mm : +- 0.05

Rated speed rpm : 800
rack travel mm : 12.85
Tolerance mm : +- 0.05

Rated speed rpm : 1050
rack travel mm : 12.45
Tolerance mm : +- 0.05

Rated speed rpm : 900
rack travel mm : 12.60
Tolerance mm : +- 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 12.85
Tolerance mm : +- 0.05

Pressure hPa : -
Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 200
rack travel mm : 0.85
Tolerance mm : +- 0.05

Pressure hPa : 400
rack travel mm : 2.10
Tolerance mm : +- 0.10

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 250

Check speed 1/min : > 80

Check speed 1/min : < 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 95.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 45.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 3.0
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.70
Tolerance mm : +- 0.10
Del. quantity
cm³/1000 strokes : 75.0
Tolerance
cm³/1000 strokes : +- 7.5
Check tolerance
cm³/1000S. : +- 10.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : +- 2.0

Check tolerance
cm³/1000s. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000s. : 9.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.03.97
Test oil : ISO 4113
Combination No. : 9 400 087 436
Injection pump
Pump designation : PE6P110A32ORS3108V
EP type number : 0 411 816 737
Governor
Governor design. : RQV250...1100PA1120
Governor no. : 9 420 080 364

Cust. part No. : 8133051

Customer-spec. information
Customer : VOLVO-TRUCK
Motor : THD 101 KC
Power KW : 228.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1 417 413 025
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : + 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0
Prestroke mm : 3.05
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10
Rack travel in mm : 10.50
Tolerance mm : + 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 700
Rack travel in mm : 13.75
Tolerance mm : + 0.05
Del. quantity
cm³/1000 strokes : 181.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 250

Rack travel in mm : 5.40
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 32.0
Tolerance
cm³/1000 strokes : ± 2.5

Check tolerance
cm³/1000S. : ± 5.0

Speed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 950
guide sleeve
travel mm : 6.50
Tolerance mm : ± 0.20

Rated speed rpm : 250
guide sleeve
travel mm : 1.20
Tolerance mm : ± 0.10

Rated speed rpm : 500
guide sleeve
travel mm : 4.50
Tolerance mm : ± 0.40

Rated speed rpm : 700
guide sleeve
travel mm : 6.50
Tolerance mm : ± 0.20

Rated speed rpm : 1100
guide sleeve
travel mm : 7.25
Tolerance mm : ± 0.25

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1175

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 181.0
Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 65.0
tolerance degree : ± 4.0

control lever
position degree : 119.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.70
Rated speed rpm : 1165
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1255
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 64.0
tolerance degree : ± 4.0

control lever
position degree : 11.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 5.40
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 375
Tolerance 1/min : + 30

Rated speed rpm : 100
CRT mm min. : > 6.80

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.75
Tolerance mm : + 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.75
Tolerance mm : + 0.05

Pressure hPa : -
Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 750
rack travel mm : 3.45
Tolerance mm : + 0.05

Pressure hPa : 300
rack travel mm : 0.85
Tolerance mm : + 0.15

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 107.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + 0.50
Del. quantity
cm³/1000 strokes : 170.0
Tolerance
cm³/1000 strokes : + 10.0
Check tolerance
cm³/1000S. : + 14.0

LOW IDLE

Rated speed rpm : 250
Del. quantity
cm³/1000 strokes : 32.0
Tolerance
cm³/1000 strokes : + 2.5
Check tolerance
cm³/1000S. : + 5.0
Speed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.03.97
Test oil : ISO 4113

Combination No. : 9 400 087 437

Injection pump
Pump designation : PE6P110A320RS3108Y
EP type number : 0 411 816 729

Governor
Governor design. : RQV250...1100PA589
Governor no. : 9 420 080 288

Cust. part No. :

Customer-spec. information
Customer : VOLVO-TRUCK
Motor : THD 100 EC
Power KW : 180.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder assembly : 0 681 343 009

Opening pressure bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant. per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.05
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.50
Check tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.15
Tolerance mm : ± 0.05

Del. quantity cm³/1000 strokes : 139.0

Tolerance cm³/1000 strokes : ± 1.0

Check tolerance cm³/1000S. : ± 4.0

Speed

Tolerance
 cm³/1000 strokes : 4.0

Check tolerance
 cm³/1000S. : 7.5

Rated speed rpm : 250

Rack travel in mm : 5.30
 Tolerance mm : + 0.10

Del. quantity
 cm³/1000 strokes : 32.0
 Tolerance
 cm³/1000 strokes : + 2.5
 Check tolerance
 cm³/1000S. : + 5.0

Spread
 Tolerance
 cm³/1000 strokes : 4.5
 Check tolerance
 cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 950
 guide sleeve
 travel mm : 6.50
 Tolerance mm : + 0.20

Rated speed rpm : 250
 guide sleeve
 travel mm : 1.20
 Tolerance mm : + 0.10

Rated speed rpm : 500
 guide sleeve
 travel mm : 4.50
 Tolerance mm : + 0.40

Rated speed rpm : 700
 guide sleeve
 travel mm : 6.50
 Tolerance mm : + 0.20

Rated speed rpm : 1100
 guide sleeve
 travel mm : 7.25
 Tolerance mm : + 0.25

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1175

Rack travel in mm : 16.50
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
 Aneroid pressure
 hPa : 900

Del. quantity
 cm³/1000 strokes : 139.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0

Spread
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 7.5

CONTROL LEVER

control lever
 position degree : 65.0
 tolerance degree : + 4.0

control lever
 position degree : 119.0
 tolerance degree : + 4.0

RATED SPEED
 rack travel mm : 10.10
 Rated speed rpm : 1165
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1240
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1350

LOW IDLE

control lever
 position degree : 64.0
 tolerance degree : + 4.0

control lever
position degree : 12.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 5.30
Tolerance mm : ± 0.10

Rated speed rpm : 100
CRT mm min. : > 6.70

Rated speed rpm : 338

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 11.15
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 11.15
Tolerance mm : ± 0.05

Pressure hPa : -
Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 430
rack travel mm : 1.20
Tolerance mm : ± 0.10

Pressure hPa : 280
rack travel mm : 0.25
Tolerance mm : ± 0.05

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700

Del. quantity
cm³/1000 strokes : 107.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 170.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 250
Del. quantity
cm³/1000 strokes : 32.0
Tolerance
cm³/1000 strokes : ± 2.5
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.03.97
Test oil : ISO 4113

Combination No. : 9 400 087 438

Injection pump
Pump designation : PE6P110A32ORS3108X
EP type number : 0 411 816 730

Governor
Governor design. : RQV250...1100PA589
Governor no. : 9 420 080 288

Cust. part No. :

Customer-spec. information
Customer : VOLVO-TRUCK
Motor : THD100 ED
Power KW : 203.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 166.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
 cm³/1000 strokes : 4.0

Check tolerance
 cm³/1000s. : 7.5

Rated speed rpm : 250

Rack travel in mm : 5.10
 Tolerance mm : + 0.10

Del. quantity
 cm³/1000 strokes : 32.0
 Tolerance
 cm³/1000 strokes : + 2.5

Check tolerance
 cm³/1000s. : + 5.0

Spread
 Tolerance
 cm³/1000 strokes : 4.5
 Check tolerance
 cm³/1000s. : 7.5

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 950
 guide sleeve
 travel mm : 6.50
 Tolerance mm : + 0.20

Rated speed rpm : 250
 guide sleeve
 travel mm : 1.20
 Tolerance mm : + 0.10

Rated speed rpm : 500
 guide sleeve
 travel mm : 4.50
 Tolerance mm : + 0.40

Rated speed rpm : 700
 guide sleeve
 travel mm : 6.50
 Tolerance mm : + 0.20

Rated speed rpm : 1100
 guide sleeve
 travel mm : 7.25
 Tolerance mm : + 0.25

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1175

Rack travel in mm : 16.50
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
 Aneroid pressure
 hPa : 900

Del. quantity
 cm³/1000 strokes : 166.0
 Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
 cm³/1000s. : + 4.0

Spread
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000s. : 7.5

CONTROL LEVER

control lever
 position degree : 65.0
 tolerance degree : + 4.0

control lever
 position degree : 119.0
 tolerance degree : + 4.0

RATED SPEED
 rack travel mm : 11.10
 Rated speed rpm : 1165
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1240
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1350

LOW IDLE

control lever
 position degree : 64.0
 tolerance degree : + 4.0

control lever
position degree : 12.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 5.10
Tolerance mm : ± 0.10

Rated speed rpm : 100
CRT mm min. : > 6.70

Rated speed rpm : 338

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.45
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 12.15
Tolerance mm : ± 0.05

Pressure hPa : -
Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 2.50
Tolerance mm : ± 0.10

Pressure hPa : 280
rack travel mm : 0.25
Tolerance mm : ± 0.05

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700

EO1

Del. quantity
cm³/1000 strokes : 113.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000s. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 170.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000s. : ± 14.0

LOW IDLE

Rated speed rpm : 250
Del. quantity
cm³/1000 strokes : 32.0
Tolerance
cm³/1000 strokes : ± 2.5
Check tolerance
cm³/1000s. : ± 5.0
Speed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000s. : 7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.03.97
Test oil : ISO 4113

Combination No. : 9 400 087 439

Injection pump
Pump designation : PE6P110A32ORS3108Z
EP type number : 0 411 816 728

Governor
Governor design. : RQV250...11C0PA589
Governor no. : 9 420 080 288

Cust. part No. :

Customer-spec. information
Customer : VOLVO-TRUCK
Motor : THD 101 GB
Power KW : 160.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 10.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 123.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
 cm³/1000 strokes : 4.0

Check tolerance
 cm³/1000S. : 7.5

Rated speed rpm : 250

Rack travel in mm : 5.40
 Tolerance mm : + 0.10

Del. quantity
 cm³/1000 strokes : 32.0
 Tolerance
 cm³/1000 strokes : + 2.5
 Check tolerance
 cm³/1000S. : + 5.0

Speed
 Tolerance
 cm³/1000 strokes : 4.5
 Check tolerance
 cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 950
 guide sleeve
 travel mm : 6.50
 Tolerance mm : + 0.20

Rated speed rpm : 250
 guide sleeve
 travel mm : 1.20
 Tolerance mm : + 0.10

Rated speed rpm : 500
 guide sleeve
 travel mm : 4.50
 Tolerance mm : + 0.40

Rated speed rpm : 700
 guide sleeve
 travel mm : 6.50
 Tolerance mm : + 0.20

Rated speed rpm : 1100
 guide sleeve
 travel mm : 7.25
 Tolerance mm : + 0.25

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1175

Rack travel in mm : 16.50
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
 Aneroid pressure
 hPa : 750
 Del. quantity
 cm³/1000 strokes : 123.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0

Speed
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 7.5

CONTROL LEVER

control lever
 position degree : 65.0
 tolerance degree : + 4.0

control lever
 position degree : 119.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 9.50
 Rated speed rpm : 1165
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1240
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1350

LOW IDLE

control lever
 position degree : 64.0
 tolerance degree : + 4.0

control lever
position degree : 11.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 5.40
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 380
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 6.80

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 10.55
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 750
rack travel mm : 10.55
Tolerance mm : + 0.05

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.70
Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 310
rack travel mm : 10.30
Tolerance mm : + 0.10

Pressure hPa : 265
rack travel mm : 9.95
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100

Check
speed 1/min : > 80

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 107.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + 0.50
Del. quantity
cm³/1000 strokes : 175.0
Tolerance
cm³/1000 strokes : + 10.0
Check tolerance
cm³/1000S. : + 14.0

LOW IDLE

Rated speed rpm : 250
Del. quantity
cm³/1000 strokes : 32.0
Tolerance
cm³/1000 strokes : + 2.5
Check tolerance
cm³/1000S. : + 5.0
Speed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.03.97
Test oil :

Combination No. : 9 400 030 669FS

Injection pump
Pump designation : PES6A100D320/3RS3503
EP type number : 9 410 037 213

Governor
Gouverner design. :
Governer no. :

Cust. part No. : TATA-CUMMINS

Customer-spec. information
Customer : CUMMINS
Motor : 6BTAA-160
Power KW : 118.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2;

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 9 451 037 430

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

E05

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.10
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

Start of delivery blocking

*NW after s.o.d. : 7.00
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 97.7

Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
 cm³/1000S. : + 3.0

Spread

Tolerance
 cm³/1000 strokes : 3.5

Check tolerance
 cm³/1000S. : 6.0

Rated speed rpm : 400

Rack travel in mm : 6.00
 Tolerance mm : + 0.10

Del. quantity
 cm³/1000 strokes : 10.0

Tolerance
 cm³/1000 strokes : + 3.0

Check tolerance
 cm³/1000S. : + 4.5

Spread

Tolerance
 cm³/1000 strokes : 4.5

Check tolerance
 cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1347
 guide sleeve
 travel mm : 8.48
 Tolerance mm : + 0.15

Rated speed rpm : 400
 guide sleeve
 travel mm : 1.71
 Tolerance mm : + 0.20

Rated speed rpm : 880
 guide sleeve
 travel mm : 4.97
 Tolerance mm : + 0.25

Rated speed rpm : 499
 guide sleeve
 travel mm : 2.75
 Tolerance mm : + 0.25

Rated speed rpm : 549

guide sleeve
 travel mm : 3.30
 Tolerance mm : + 0.25

Rated speed rpm : 560
 guide sleeve
 travel mm : 3.37
 Tolerance mm : + 0.25

Rated speed rpm : 1620
 guide sleeve
 travel mm : 11.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1250

Rack travel in mm : 16.00
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
 Aneroid pressure
 hPa : 600

Del. quantity
 cm³/1000 strokes : 97.7

Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
 cm³/1000S. : + 3.0

Spread

Tolerance
 cm³/1000 strokes : 3.5

Check tolerance
 cm³/1000S. : 6.0

CONTROL LEVER

control lever
 position degree : 61.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.75
 Rated speed rpm : 1300
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1425
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1485

LOW IDLE

control lever
position degree : 15.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 400
rack travel mm : 6.00
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 625
Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 9.00

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.75
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 11.75
Tolerance mm : ± 0.10

Rated speed rpm : 1250
rack travel mm : 11.75
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 600
rack travel mm : 11.75
Tolerance mm : ± 0.10

Pressure hPa : -
Rated speed rpm : 550
rack travel mm : 10.50
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 550

E07

Pressure hPa : 400
rack travel mm : 11.20
Tolerance mm : ± 0.20

Pressure hPa : 340
rack travel mm : 10.80
Tolerance mm : ± 0.20

Start interlock

Rated speed rpm : > 120
Rated speed rpm : < 300

Check
speed 1/min : > 100
Check
speed 1/min : < 340

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 600
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 96.2
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 3.5
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 10.0

Aneroid pressure
hPa : 600
Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 99.4
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 3.5
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 10.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 64.3
Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : +- 3.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 10.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.00
Tolerance mm : +- 0.75
Del. quantity
cm³/1000 strokes : 109.0
Tolerance
cm³/1000 strokes : +- 8.0
Check tolerance
cm³/1000S. : +- 10.0

LOW IDLE

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 10.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 4.5
Spreed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.03.97
Test oil : ISO 4113

Combination No. : 0 400 846 493

Injection pump
Pump designation : PES6A90D410RS2596
EP type number : 0 410 896 073

Governor
Governor design. : RQV300...1400AB1120
: 1L
Governor no. : 0 420 212 157

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM352A
Power KW : 124.0

TEST BENCH REQUIREMENTS

Inlet line : 1.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 11.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 73.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.5

Speed

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 4.5

Rated speed rpm : 300

Rack travel in mm : 8.60
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 5.0
 Spreed
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1453
 guide sleeve
 travel mm : 8.06
 Tolerance mm : + 0.25

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.06
 Tolerance mm : + 0.25

Rated speed rpm : 923
 guide sleeve
 travel mm : 4.87
 Tolerance mm : + 0.25

Rated speed rpm : 593
 guide sleeve
 travel mm : 3.46
 Tolerance mm : + 0.25

Rated speed rpm : 643
 guide sleeve
 travel mm : 3.86
 Tolerance mm : + 0.25

Rated speed rpm : 610
 guide sleeve
 travel mm : 3.76
 Tolerance mm : + 0.25

Rated speed rpm : 1810
 guide sleeve
 travel mm : 11.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1500

Rack travel in mm : 16.50
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
 Aneroid pressure
 hPa : 700
 Del. quantity
 cm³/1000 strokes : 73.5
 Tolerance
 cm³/1000 strokes : + 0.5
 Check tolerance
 cm³/1000S. : + 2.5
 Spreed
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 4.5

CONTROL LEVER

control lever
 position degree : 115.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.90
 Rated speed rpm : 1445
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1585
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1750

LOW IDLE

control lever
 position degree : 74.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300

rack travel mm : 8.60
Tolerance mm : + 0.10
Rated speed rpm : 100
CRT mm min. : > 10.10
Rated speed rpm : 625

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 11.95
Tolerance mm : + 0.05
Rated speed rpm : 500
rack travel mm : 13.05
Tolerance mm : + 0.05
Rated speed rpm : 1000
rack travel mm : 12.80
Tolerance mm : + 0.10
Rated speed rpm : 1200
rack travel mm : 12.25
Tolerance mm : + 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 13.05
Tolerance mm : + 0.05
Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 11.95
Tolerance mm : + 0.05

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 220
rack travel mm : 12.30
Tolerance mm : + 0.10
Pressure hPa : 320
rack travel mm : 12.75
Tolerance mm : + 0.05
Start interlock
Rated speed rpm : > 100

Rated speed rpm : < 220
Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 68.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000s. : + 3.0
Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 57.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000s. : + 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 15.10
Tolerance mm : + 0.20
Del. quantity
cm³/1000 strokes : 77.0
Tolerance
cm³/1000 strokes : + 5.0
Check tolerance
cm³/1000s. : + 8.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000s. : + 5.0
Speed
Tolerance
cm³/1000 strokes : 2.0

Check tolerance
cm³/1000S. : 4.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.03.97
Test oil : ISO 4113

Combination No. : 0 400 866 235

Injection pump
Pump designation : PES6A95D410/3RS2907
EP type number : 0 410 896 884

Governor
Governor design. : RSV325...1250A5C917L
Governor no. : 0 420 232 639

Cust. part No. : 0423 2334 KY

Customer-spec. information
Customer : KHD-DMI
Motor : F6L913
Power KW : 89.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder assembly : 0 681 343 009

Opening pressure bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.50
Check tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.35
Tolerance mm : ± 0.05

Del. quantity cm³/1000 strokes : 76.0

Tolerance cm³/1000 strokes : ± 1.0

Check tolerance cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 8.50
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 11.5

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spread
Tolerance

cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : FREE
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure

hPa : -

Del. quantity
cm³/1000 strokes : 76.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 102.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.35
Rated speed rpm : 1295
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1340
Tolerance 1/min : ± 15

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1510

rack travel mm : 4.00
Rated speed rpm : 1360

LOW IDLE

control lever
position degree : 69.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 8.00
Tolerance mm : ± 0.10

Testing:

Rated speed rpm : 325
rack travel mm : 8.50
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 485
Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.50

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 11.35
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 11.80
Tolerance mm : \pm 0.10

Start interlock

End of test specification sheet

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 70.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 17.00
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 90.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 11.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 21.03.97
Test oil : ISO 4113
Combination No. : 0 400 874 257
Injection pump
Pump designation : PES4A95D320RS2807
EP type number : 0 410 894 994
Governor
Governor design. : RSV375...1125A2C898R
Governor no. : 0 420 233 351

Cust. part No. : 8367 54718

Customer-spec. information
Customer : SISU
Motor : 420 DS
Power Kw : 75.0

TEST BENCH REQUIREMENTS

Inlet line : 2.3
Test oil inlet temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde assembly : 0 681 343 009
Opening pressure bar : 173.5
Tolerance bar : ± 1.5
Test Lines : 1 680 750 014
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant. per values

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Firing order : 1- 2- 4- 3
Phasing : 0-90-180-270

Beginning of delivery differende

and maximum rack travel : 9.00
Tolerance mm : ± 0.50
Difference * CS : 5.00

BASIC SETTING

Rated speed rpm : 1125
Rack travel in mm : 11.25
Tolerance mm : ± 0.05
Del. quantity cm3/1000 strokes : 87.5
Tolerance cm3/1000 strokes : ± 1.0
Check tolerance cm3/1000S. : ± 3.0
Spreed
Tolerance cm3/1000 strokes : 3.5
Check tolerance cm3/1000S. : 8.0

Rated speed rpm : 375

Rack travel in mm : 5.60
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 21.0
Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000s. : + 4.5

Spread
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000s. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1125
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 87.5
Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000s. : 8.0

CONTROL LEVER

control lever
position degree : 101.0
tolerance degree : + 4.0

RATED SPEED

E17

rack travel mm : 10.20
Rated speed rpm : 1170
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1250
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1410

rack travel mm : 4.00
Rated speed rpm : 1260

LOW IDLE

control lever
position degree : 75.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 375
rack travel mm : 5.10
Tolerance mm : + 0.10

Testing:

Rated speed rpm : 375
rack travel mm : 5.60
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 495
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.50

TORQUE CONTROL

Rated speed rpm : 1125
rack travel mm : 11.25
Tolerance mm : + 0.05

Rated speed rpm : 500
rack travel mm : 11.60
Tolerance mm : + 0.05

Rated speed rpm : 750
rack travel mm : 11.55
Tolerance mm : + 0.05

Rated speed rpm : 965
rack travel mm : 11.35
Tolerance mm : \pm 0.10

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 87.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 200.0
Tolerance
cm³/1000 strokes : \pm 8.0
Check tolerance
cm³/1000S. : \pm 11.0

LOW IDLE

Rated speed rpm : 375
Del. quantity
cm³/1000 strokes : 21.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.03.97
Test oil : ISO 4113

Combination No. : 0 400 876 437

Injection pump
Pump designation : PES6A95D32ORS2806
EP type number : 0 410 896 898

Governor
Governor design. : RSV375...1125A0C900R
Governor no. : 0 420 233 353

Cust. part No. : 8358 54720

Customer-spec. information
Customer : SISU
Motor : 620D
Power KW : 88.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

Beginning of delivery difference

Difference * CS : 5.00

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 9.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 74.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
 cm³/1000 strokes : 3.5

Check tolerance
 cm³/1000s. : 8.0

Rated speed rpm : 375

Rack travel in mm : 4.00
 Tolerance mm : ± 0.10

Del. quantity
 cm³/1000 strokes : 14.0
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000s. : ± 4.5

Spreed
 Tolerance
 cm³/1000 strokes : 5.5
 Check tolerance
 cm³/1000s. : 9.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800

Rack travel in mm : 0.50
 Tolerance mm : ± 0.20

governor spring
 pre-tension
 click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
 Aneroid pressure
 hPa : -

Del. quantity
 cm³/1000 strokes : 74.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000s. : ± 3.0

Spreed
 Tolerance
 cm³/1000 strokes : 3.5

Check tolerance
 cm³/1000s. : 8.0

CONTROL LEVER

control lever
 position degree : 90.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 8.00
 Rated speed rpm : 1145
 Tolerance 1/min : ± 5

rack travel mm : 4.00
 Rated speed rpm : 1195
 Tolerance 1/min : ± 15

rack travel mm : 0.85
 Tolerance mm : ± 0.55
 Rated speed rpm : 1350

rack travel mm : 4.00
 Rated speed rpm : 1200

LOW IDLE

control lever
 position degree : 71.0
 tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 375
 rack travel mm : 3.50
 Tolerance mm : ± 0.10

Testing:

Rated speed rpm : 375
 rack travel mm : 4.00
 Tolerance mm : ± 0.10

rack travel mm : 2.00
 Rated speed rpm : 455
 Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.50

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 9.05
Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 9.35
Tolerance mm : ± 0.05

Rated speed rpm : 980
rack travel mm : 9.00
Tolerance mm : ± 0.10

Start interlock

End of test specification sheet

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 58.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : ± 0.75
Del. quantity
cm³/1000 strokes : 200.0
Tolerance
cm³/1000 strokes : ± 8.0
Check tolerance
cm³/1000S. : ± 11.0

LOW IDLE

Rated speed rpm : 375
Del. quantity
cm³/1000 strokes : 14.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.03.97
Test oil : ISO 4113

Combination No. : F 002 A02 035

Injection pump
Pump designation : PES4A95D320/3RS2880
EP type number : 9 410 037 214

Governor
Governor design. : RSV475...1050A0C913R
Governor no. : F 002 A20 225

Cust. part No. : DEP: 3283693

Customer-spec. information

Motor : CUMMINS-4BTA-3.9
Power kW : 77.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Start of delivery blocking

*NW after s.o.d. : 6.50
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 112.1

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 3.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rated speed rpm : 475

Rack travel in mm : 5.60

Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 20.5

Tolerance
cm³/1000 strokes : +- 2.0

Check tolerance
cm³/1000S. : +- 4.5

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : FREE
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : +- 0.20

governor spring
pre-tension
click setting x : 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050

Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 112.1

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : + 3.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever

position degree : 103.0

tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 11.75

Rated speed rpm : 1115

Tolerance 1/min : +- 5

rack travel mm : 5.90

Rated speed rpm : 1195

Tolerance 1/min : +- 5

rack travel mm : 0.85

Tolerance mm : +- 0.55

Rated speed rpm : 1300

rack travel mm : 5.90

Rated speed rpm : 1195

LOW IDLE

control lever

position degree : 82.0

tolerance degree : +- 4.0

Control lever difference

Grad : 21.0

tolerance degree : +- 6.0

Setting point w/out bumper spring

Rated speed rpm : 475

rack travel mm : 5.10

Tolerance mm : +- 0.10

Testing:

Rated speed rpm : 475

rack travel mm : 5.60

Tolerance mm : +- 0.10

rack travel mm : 2.00

Rated speed rpm : 560

Tolerance 1/min : + 30
Rated speed rpm : 100
CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 12.75
Tolerance mm : + 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 11.20
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 660
rack travel mm : 12.30
Tolerance mm : + 0.20

Pressure hPa : 460
rack travel mm : 11.50
Tolerance mm : + 0.20

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 80.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + 0.50
Del. quantity
cm³/1000 strokes : 121.5
Tolerance
cm³/1000 strokes : + 10.0
Check tolerance
cm³/1000S. : + 15.0

LOW IDLE

Rated speed rpm : 475
Del. quantity
cm³/1000 strokes : 20.5
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.5
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.02.97
Test oil : ISO 4113

Combination No. : 0 402 746 611

Injection pump
Pump designation : PES6P120A32ORS7372
EP type number : 0 412 726 940

Governor
Governor design. : RQV250...1400PA1279K
Governor no. : 0 421 815 508

Cust. part No. : 3866783

Customer-spec. information
Customer : CDC
Motor : 6BTA
Power KW : 235.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 11.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 13.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 186.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 300

Rack travel in mm : 7.00
Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 28.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 5.0

Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1455
guide sleeve
travel mm : 9.16
Tolerance mm : ± 0.15

Rated speed rpm : 275
guide sleeve
travel mm : 1.39
Tolerance mm : ± 0.20

Rated speed rpm : 931
guide sleeve
travel mm : 5.67
Tolerance mm : ± 0.25

Rated speed rpm : 480
guide sleeve
travel mm : 3.18

Tolerance mm : ± 0.25

Rated speed rpm : 1860
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 186.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 118.5
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 12.80
Rated speed rpm : 1465
Tolerance 1/min : ± 5

rack travel mm : 6.80
Rated speed rpm : 1580
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1725

LOW IDLE

control lever
position degree : 74.5
tolerance degree : ± 4.0

Control lever difference
Grad : 44.0
tolerance degree : ± 6.0

Testing:

Rated speed rpm : 300
rack travel mm : 7.00
Tolerance mm : ± 0.20

Rated speed rpm : 200

CRT mm min. : > 8.60

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 13.45
Tolerance mm : ± 0.05

Rated speed rpm : 1000
rack travel mm : 13.20
Tolerance mm : ± 0.10

Rated speed rpm : 700
rack travel mm : 13.00
Tolerance mm : ± 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1400
Pressure hPa : 1200

Pressure hPa : -
Rated speed rpm : 1000
rack travel mm : 9.80
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 1400

Pressure hPa : 620
rack travel mm : 12.40
Tolerance mm : ± 0.20

Pressure hPa : 280
rack travel mm : 10.70
Tolerance mm : ± 0.20

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 240

Check
speed 1/min : > 80
Check
speed 1/min : < 250

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 178.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 98.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 170.5
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 25.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 28.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed

Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.03.97
Test oil : ISO 4113

Combination No. : 0 402 746 612

Injection pump
Pump designation : PES6P120A320RS7372
EP type number : 0 412 726 940

Governor
Governor design. : RQV250...1300PA1282K
Governor no. : 0 421 815 515

Cust. part No. : 3866784

Customer-spec. information
Customer : CDC
Motor : 6BTA
Power KW : 187.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 515

Outside diameter : 6.0

F01

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 11.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 12.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 158.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 300

Rack travel in mm : 6.80
Tolerance mm : + 0.20

Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 5.0

Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1355
guide sleeve
travel mm : 8.32
Tolerance mm : + 0.15

Rated speed rpm : 275
guide sleeve
travel mm : 1.39
Tolerance mm : + 0.20

Rated speed rpm : 885
guide sleeve
travel mm : 5.46
Tolerance mm : + 0.25

Rated speed rpm : 480
guide sleeve
travel mm : 3.18

Tolerance mm : + 0.25

Rated speed rpm : 1860
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 158.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 116.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.45
Rated speed rpm : 1375
Tolerance 1/min : + 5

rack travel mm : 7.50
Rated speed rpm : 1465
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1650

LOW IDLE

control lever
position degree : 81.0
tolerance degree : + 4.0

Control lever difference
Grad : 35.0
tolerance degree : + 6.0

Testing:

Rated speed rpm : 300
rack travel mm : 6.80
Tolerance mm : ± 0.20

Rated speed rpm : 250

CRT mm min. : > 8.00

Rated speed rpm : 450

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 12.45
Tolerance mm : ± 0.05

Rated speed rpm : 900
rack travel mm : 12.10
Tolerance mm : ± 0.10

Rated speed rpm : 700
rack travel mm : 12.15
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 11.90
Tolerance mm : ± 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1300
Pressure hPa : 1200

Pressure hPa : -
Rated speed rpm : 1000
rack travel mm : 9.45
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 1300

Pressure hPa : 600
rack travel mm : 11.50
Tolerance mm : ± 0.20

Pressure hPa : 255
rack travel mm : 10.00
Tolerance mm : ± 0.20

Start interlock

Rated speed rpm : < 250

Check speed 1/min : < 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1200

Rated speed rpm : 900

Del. quantity cm³/1000 strokes : 156.5

Tolerance cm³/1000 strokes : ± 3.0

Check tolerance cm³/1000S. : ± 6.0

Spread Tolerance cm³/1000 strokes : 8.0

Check tolerance cm³/1000S. : 12.0

Aneroid pressure hPa : -

Rated speed rpm : 1000

Del. quantity cm³/1000 strokes : 94.5

Tolerance cm³/1000 strokes : ± 1.0

Check tolerance cm³/1000S. : ± 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.90

Tolerance mm : ± 0.50
Del. quantity cm³/1000 strokes : 185.0

Tolerance cm³/1000 strokes : ± 20.0

Check tolerance cm³/1000S. : ± 25.0

LOW IDLE

Rated speed rpm : 300

Del. quantity cm³/1000 strokes : 26.0

Tolerance cm³/1000 strokes : ± 3.0

Check tolerance cm³/1000S. : ± 5.0

Spread

Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000s. : 8.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.03.97
Test oil : ISO 4113

Combination No. : F 002 A0Z 023

Injection pump
Pump designation : PES6A95D320/3RS2881
EP type number : 9 410 037 215

Governor
Governor design. : RSV500...1000ADC895R
Governor no. : F 002 A20 217

Cust. part No. : 3929405

Customer-spec. information

Customer : CDC
Motor : 6BT
Power KW : 104.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder assembly : 1 688 901 101

Opening pressure bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

F05

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.50
Check tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 7.00
Tolerance : ± 0.50
Check tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.95
Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	: 101.0
Tolerance cm ³ /1000 strokes	: + 1.0
Check tolerance cm ³ /1000S.	: + 3.0
Spreed	
Tolerance cm ³ /1000 strokes	: 3.5
Check tolerance cm ³ /1000S.	: 6.0

Rated speed rpm	: 500
Rack travel in mm	: 5.30
Tolerance mm	: + 0.10
Del. quantity cm ³ /1000 strokes	: 18.5
Tolerance cm ³ /1000 strokes	: + 2.0
Check tolerance cm ³ /1000S.	: + 4.5
Spreed	
Tolerance cm ³ /1000 strokes	: 3.5
Check tolerance cm ³ /1000S.	: 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	: - 3
Rated speed rpm	: 800
Rack travel in mm	: 0.50
Tolerance mm	: + 0.20
governor spring pre-tension click setting x	: 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1000
-----------------	--------

Aneroid pressure hPa	: 900
Del. quantity cm ³ /1000 strokes	: 101.0
Tolerance cm ³ /1000 strokes	: + 1.0
Check tolerance cm ³ /1000S.	: + 3.0
Spreed	
Tolerance cm ³ /1000 strokes	: 3.5
Check tolerance cm ³ /1000S.	: 6.0

CONTROL LEVER

control lever position degree	: 91.0
tolerance degree	: + 4.0

RATED SPEED

rack travel mm	: 10.90
Rated speed rpm	: 1065
Tolerance 1/min	: + 5

rack travel mm	: 5.70
Rated speed rpm	: 1110
Tolerance 1/min	: + 5

rack travel mm	: 0.85
Tolerance mm	: + 0.55
Rated speed rpm	: 1250

rack travel mm	: 5.70
Rated speed rpm	: 1110

LOW IDLE

control lever position degree	: 74.0
tolerance degree	: + 4.0

Control lever difference

Grad	: 17.0
tolerance degree	: + 6.0

Setting point w/out bumper spring

Rated speed rpm	: 500
rack travel mm	: 4.80
Tolerance mm	: + 0.10

Testing:

Rated speed rpm : 500
rack travel mm : 5.30
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.95
Tolerance mm : ± 0.05

Rated speed rpm : 800

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 11.50
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 530
rack travel mm : 11.75
Tolerance mm : ± 0.05

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 98.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 120.5
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 15.0

LOW IDLE

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 18.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.04.97
Test oil : ISO 4113

Combination No. : 0 402 746 617

Injection pump
Pump designation : PES6P120A72ORS7423
EP type number : 0 412 726 963

Governor
Governor design. : RQV325...975PA909
: K
Governor no. : 0 421 815 531

Cust. part No. : 313GC5224-P10

Customer-spec. information
Customer : MACK
Motor : EN7300A
Power kW : 223.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 2 417 413 084

Inlet press. bar : 2.8
Tolerance bar : +- 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : +- 1.0

Prestroke mm : 2.80
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10

Rack travel in mm : 10.50
Tolerance mm : +- 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : +- 0.30
Check
tolerance °NW : +- 0.75

Start of delivery blocking
Tolerance : +- 0.50
Check
tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 975

Rack travel in mm : 12.55
Tolerance mm : +- 0.05

Del. quantity
cm³/1000 strokes : 202.0

Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
 cm³/1000S. : + 4.0

Spread

Tolerance
 cm³/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 9.0

Rated speed rpm : 325

Rack travel in mm : 5.30
 Tolerance mm : + 0.10

Del. quantity
 cm³/1000 strokes : 44.0

Tolerance
 cm³/1000 strokes : + 3.0

Check tolerance
 cm³/1000S. : + 5.0

Spread

Tolerance
 cm³/1000 strokes : 8.0

Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1030
 guide sleeve
 travel mm : 8.84
 Tolerance mm : + 0.15

Rated speed rpm : 325
 guide sleeve
 travel mm : 1.27
 Tolerance mm : + 0.20

Rated speed rpm : 524
 guide sleeve
 travel mm : 3.30
 Tolerance mm : + 0.25

Rated speed rpm : 390
 guide sleeve
 travel mm : 2.30
 Tolerance mm : + 0.25

Rated speed rpm : 1430

guide sleeve
 travel mm : 13.50
 Tolerance mm : + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 975
 Aneroid pressure
 hPa : 1200

Del. quantity
 cm³/1000 strokes : 202.0

Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
 cm³/1000S. : + 4.0

Spread

Tolerance
 cm³/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 106.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.60
 Rated speed rpm : 1020
 Tolerance 1/min : + 5

Check
 speed 1/min : + 10

rack travel mm : 4.00
 Rated speed rpm : 1175
 Tolerance 1/min : + 15

Check
 speed 1/min : + 20

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1250

LOW IDLE

control lever
 position degree : 61.5
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 325

rack travel mm : 5.30
Tolerance mm : + 0.10
Rated speed rpm : 275
CRT mm min. : > 6.50
Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 975
rack travel mm : 12.55
Tolerance mm : + 0.05
Rated speed rpm : 600
rack travel mm : 12.00
Tolerance mm : + 0.10
Rated speed rpm : 500
rack travel mm : 11.50
Tolerance mm : + 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 975
Pressure hPa : 1200
rack travel mm : 12.55
Tolerance mm : + 0.05
Pressure hPa : -
Rated speed rpm : 975
rack travel mm : 8.10
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 975
Pressure hPa : 460
rack travel mm : 11.15
Tolerance mm : + 0.20
Pressure hPa : 235
rack travel mm : 9.25
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 275
Check
speed 1/min : > 80

Check
speed 1/min : < 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 221.5
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000S. : + 6.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm3/1000 strokes : 148.0
Tolerance
cm3/1000 strokes : + 2.0
Check tolerance
cm3/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.80
Tolerance mm : + 1.00
Del. quantity
cm3/1000 strokes : 205.0
Tolerance
cm3/1000 strokes : + 20.0
Check tolerance
cm3/1000S. : + 30.0

LOW IDLE

Rated speed rpm : 325
Del. quantity
cm3/1000 strokes : 44.0
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000S. : + 5.0
Spreed
Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm³/1000s. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.04.97
Test oil : ISO 4113

Combination No. : 0 402 746 618

Injection pump
Pump designation : PES6P120A720RS7423
EP type number : 0 412 726 963

Governor
Governor design. : RQV325...875PA909
: K
Governor no. : 0 421 815 532

Cust. part No. : 313GC5224-P6

Customer-spec. information

Customer : MACK
Motor : EPN7300
Power KW : 223.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 413 359 008

Inlet press. bar : 2.8
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 12.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 212.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325

Rack travel in mm : 5.00

Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 44.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 5.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 931
guide sleeve
travel mm : 8.41
Tolerance mm : + 0.15

Rated speed rpm : 325
guide sleeve
travel mm : 1.79
Tolerance mm : + 0.20

Rated speed rpm : 754
guide sleeve
travel mm : 6.98
Tolerance mm : + 0.25

Rated speed rpm : 520
guide sleeve
travel mm : 4.05
Tolerance mm : + 0.25

Rated speed rpm : 1350
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 212.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 109.5
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.85
Rated speed rpm : 920
Tolerance 1/min : + 5
Check
speed 1/min : + 10

rack travel mm : 4.00
Rated speed rpm : 1075
Tolerance 1/min : + 15
Check
speed 1/min : + 20

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 62.5
tolerance degree : + 4.0

Testing:

Rated speed rpm : 325
rack travel mm : 5.00
Tolerance mm : ± 0.10

Rated speed rpm : 225
CRT mm min. : > 6.50

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 875
rack travel mm : 12.85
Tolerance mm : ± 0.05

Rated speed rpm : 510
rack travel mm : 14.05
Tolerance mm : ± 0.10

Rated speed rpm : 400
rack travel mm : 13.50
Tolerance mm : ± 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 1200

Pressure hPa : -
Rated speed rpm : 510
rack travel mm : 8.40
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 510

Pressure hPa : 785
rack travel mm : 13.30
Tolerance mm : ± 0.20

Pressure hPa : 370
rack travel mm : 9.90
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 275

Check
speed 1/min : > 80

Check
speed 1/min : < 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 510
Del. quantity
cm³/1000 strokes : 296.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 159.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.30
Tolerance mm : ± 1.00
Del. quantity
cm³/1000 strokes : 230.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 25.0

LOW IDLE

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 44.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.04.97
Test oil : ISO 4113
Combination No. : 0 402 746 626
Injection pump
Pump designation : PES6P120A72ORS7424
EP type number : 0 412 726 964
Governor
Governor design. : RQV325...975PA944
: K
Governor no. : 0 421 815 540
Cust. part No. : 313GC5223-P6

Customer-spec. information
Customer : MACK
Motor : E7-250A
Power KW : 180.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2 413 359 008
Inlet press. bar : 2.8
Tolerance bar : ± 0.1
Test nozzle holde
assembly : 1 688 901 103
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0
Prestroke mm : 3.30
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 12.00
Tolerance mm : ± 1.00
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50
Start of delivery blocking
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 975
Rack travel in mm : 12.95
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 270.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 340

Rack travel in mm : 4.90
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 5.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1031
guide sleeve
travel mm : 8.91
Tolerance mm : + 0.15

Rated speed rpm : 340
guide sleeve
travel mm : 2.25
Tolerance mm : + 0.20

Rated speed rpm : 882
guide sleeve
travel mm : 7.70
Tolerance mm : + 0.25

Rated speed rpm : 590
guide sleeve
travel mm : 4.37
Tolerance mm : + 0.25

Rated speed rpm : 1430

guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 975
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 270.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 111.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.90
Rated speed rpm : 1020
Tolerance 1/min : + 5
Check
speed 1/min : + 10

rack travel mm : 4.00
Rated speed rpm : 1190
Tolerance 1/min : + 15
Check
speed 1/min : + 20

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 63.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 340

rack travel mm : 4.90
 Tolerance mm : + 0.10
 Rated speed rpm : 265
 CRT mm min. : > 6.50
 Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 975
 rack travel mm : 12.95
 Tolerance mm : + 0.05
 Rated speed rpm : 600
 rack travel mm : 12.60
 Tolerance mm : + 0.10
 Rated speed rpm : 500
 rack travel mm : 11.80
 Tolerance mm : + 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 975
 Pressure hPa : 1200
 rack travel mm : 12.95
 Tolerance mm : + 0.05
 Pressure hPa : -
 Rated speed rpm : 975
 rack travel mm : 9.05
 Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 975
 Pressure hPa : 590
 rack travel mm : 11.60
 Tolerance mm : + 0.20
 Pressure hPa : 330
 rack travel mm : 9.75
 Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100
 Rated speed rpm : < 250
 Check speed 1/min : > 80

Check speed 1/min : < 255

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1200
 Rated speed rpm : 600
 Del. quantity cm³/1000 strokes : 303.0
 Tolerance cm³/1000 strokes : + 3.0
 Check tolerance cm³/1000S. : + 6.0
 Spreed Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

Aneroid pressure hPa : -
 Rated speed rpm : 400
 Del. quantity cm³/1000 strokes : 191.0
 Tolerance cm³/1000 strokes : + 2.0
 Check tolerance cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 20.00
 Tolerance mm : + 1.00
 Del. quantity cm³/1000 strokes : 180.0
 Tolerance cm³/1000 strokes : + 20.0
 Check tolerance cm³/1000S. : + 30.0

LOW IDLE

Rated speed rpm : 340
 Del. quantity cm³/1000 strokes : 40.0
 Tolerance cm³/1000 strokes : + 3.0
 Check tolerance cm³/1000S. : + 5.0
 Spreed Tolerance cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.02.97
Test oil : ISO 4113

Combination No. : 9 400 030 695

Injection pump
Pump designation : PES4A95D320/3RS2880
EP type number : 9 410 037 214

Governor
Governor design. : RSV475...1250AOC825R
Governor no. : 9 420 034 701

Cust. part No. : 3928665

Customer-spec. information

Customer : CDC
Motor : 4BT3.9
Power KW : 82.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : +- 1.0

Prestroke mm : 2.45
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10

Rack travel in mm : 10.50
Tolerance mm : +- 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : +- 0.50
Check
tolerance °NW : +- 0.75

Start of delivery blocking

*NW after s.o.d. : 8.00
Tolerance : +- 0.50
Check
tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 12.55
Tolerance mm : +- 0.05

Del. quantity
cm³/1000 strokes : 106.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 3.0

Spreed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rated speed rpm : 475

Rack travel in mm : 5.80
Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 20.5
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.5

Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : +- 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 106.0

Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 3.0

Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 114.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 11.50
Rated speed rpm : 1335
Tolerance 1/min : +- 5

rack travel mm : 6.80
Rated speed rpm : 1395
Tolerance 1/min : +- 5

rack travel mm : 0.85
Tolerance mm : +- 0.55
Rated speed rpm : 1450

rack travel mm : 6.80
Rated speed rpm : 1395

LOW IDLE

control lever
position degree : 87.0
tolerance degree : +- 4.0

Control lever difference
Grad : 27.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 475
rack travel mm : 5.30
Tolerance mm : +- 0.10

Testing:

Rated speed rpm : 475
rack travel mm : 5.80
Tolerance mm : +- 0.10

Rated speed rpm : 100
CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 12.55
Tolerance mm : \pm 0.05

Rated speed rpm : 750

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 11.50
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 600
rack travel mm : 12.30
Tolerance mm : \pm 0.20

Pressure hPa : 460
rack travel mm : 11.75
Tolerance mm : \pm 0.20

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 80.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 475
Del. quantity
cm³/1000 strokes : 20.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.01.97
Test oil : ISO 4113
Combination No. : 9 400 030 721
Injection pump
Pump designation : PES6A95D320/3RS2895
EP type number : 9 410 037 238
Governor
Governor design. : RSV475...1250A0C839R
Governor no. :

Cust. part No. : 3929601

Customer-spec. information
Customer : CDC
Motor : 63TA
Power kW : 130.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 047
Inlet press. bar : 2.0
Test nozzle holder
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0
Prestroke mm : 2.70
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
Start of delivery blocking
*NW after s.o.d. : 9.00
Tolerance : ± 0.10
Check
tolerance *NW : ± 0.29
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250
Rack travel in mm : 12.70
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 107.5

Tolerance
 cm³/1000 strokes : +- 1.0

 Check tolerance
 cm³/1000S. : +- 3.0

 Spreed

 Tolerance
 cm³/1000 strokes : 3.5

 Check tolerance
 cm³/1000S. : 6.0

 Rated speed rpm : 550

 Rack travel in mm : 5.50
 Tolerance mm : +- 0.10
 Del. quantity
 cm³/1000 strokes : 17.5
 Tolerance
 cm³/1000 strokes : +- 2.0
 Check tolerance
 cm³/1000S. : +- 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : FREE
 Rated speed rpm : 800

 Rack travel in mm : 0.50
 Tolerance mm : +- 0.20

 governor spring
 pre-tension
 click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
 Aneroid pressure
 hPa : 900
 Del. quantity
 cm³/1000 strokes : 107.5

Tolerance
 cm³/1000 strokes : +- 1.0
 Check tolerance
 cm³/1000S. : +- 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 6.0

CONTROL LEVER

control lever
 position degree : 108.0
 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 11.80
 Rated speed rpm : 1340
 Tolerance 1/min : +- 5

rack travel mm : 5.80
 Rated speed rpm : 1385
 Tolerance 1/min : +- 5

rack travel mm : 0.85
 Tolerance mm : +- 0.55
 Rated speed rpm : 1450

rack travel mm : 5.80
 Rated speed rpm : 1385

LOW IDLE

control lever
 position degree : 78.0
 tolerance degree : +- 4.0

Control lever difference
 Grad : 30.0
 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 550
 rack travel mm : 5.00
 Tolerance mm : +- 0.10

Testing:

Rated speed rpm : 550
 rack travel mm : 5.50
 Tolerance mm : +- 0.10

Rated speed rpm : 100
CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 12.70
Tolerance mm : + 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.70
Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 480
rack travel mm : 12.20
Tolerance mm : + 0.20

Pressure hPa : 350
rack travel mm : 11.40
Tolerance mm : + 0.20

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 72.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50

F25

Tolerance mm : + 0.50
Del. quantity
cm³/1000 strokes : 121.5
Tolerance
cm³/1000 strokes : + 10.0
Check tolerance
cm³/1000S. : + 15.0

LOW IDLE

Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 17.5
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : + 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.04.97
Test oil : ISO 4113

Combination No. : 9 400 030 737

Injection pump
Pump designation : PES6A95D320/3RS2881
EP type number : 9 410 037 215

Governor
Governor design. : RSV475...1100A0C850R
Governor no. : 9 420 034 716

Cust. part No. : 3929409

Customer-spec. information
Customer : CDC
Motor : 6BT
Power KW : 90.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 7.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 10.85
Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	: 86.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 3.0
Spread	
Tolerance cm ³ /1000 strokes	: 3.5
Check tolerance cm ³ /1000S.	: 6.0

Rated speed rpm : 500

Rack travel in mm	: 5.40
Tolerance mm	: ± 0.10
Del. quantity cm ³ /1000 strokes	: 18.5
Tolerance cm ³ /1000 strokes	: ± 2.0
Check tolerance cm ³ /1000S.	: ± 4.5
Spread	
Tolerance cm ³ /1000 strokes	: 3.5
Check tolerance cm ³ /1000S.	: 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	: - 3
Rated speed rpm	: 800
Rack travel in mm	: 0.50
Tolerance mm	: ± 0.20
governor spring pre-tension click setting x	: 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure hPa	: 900
Del. quantity cm ³ /1000 strokes	: 86.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 3.0
Spread	
Tolerance cm ³ /1000 strokes	: 3.5
Check tolerance cm ³ /1000S.	: 6.0

CONTROL LEVER

control lever position degree	: 94.0
tolerance degree	: ± 4.0

RATED SPEED

rack travel mm	: 9.80
Rated speed rpm	: 1165
Tolerance 1/min	: ± 5

rack travel mm	: 5.50
Rated speed rpm	: 1220
Tolerance 1/min	: ± 5

rack travel mm	: 0.85
Tolerance mm	: ± 0.55
Rated speed rpm	: 1300

rack travel mm	: 5.50
Rated speed rpm	: 1230

LOW IDLE

control lever position degree	: 80.0
tolerance degree	: ± 4.0

Control lever difference Grad	: 14.0
tolerance degree	: ± 6.0

Setting point w/out bumper spring

Rated speed rpm	: 500
rack travel mm	: 4.90
Tolerance mm	: ± 0.10

Testing:

Rated speed rpm : 500
rack travel mm : 5.40
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : $>$ 19.00

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 10.85
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 11.40
Tolerance mm : \pm 0.10

Rated speed rpm : 1100
rack travel mm : 13.60
Tolerance mm : \pm 0.30

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 96.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 120.5
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 18.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.11.96
Test oil : ISO 4113

Combination No. : 0 401 848 708

Injection pump
Pump designation : PE8P110A320LS3802
EP type number : 0 411 818 710

Governor
Governor design. : RQ300/1150PA187-3
Governor no. : 0 421 801 133

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM422
Power KW : 206.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 8- 7- 2- 6- 3
 : - 4- 1

Phasing : 0-45-90-135-180
 : -270-315
Tolerance : ± 0.30
Check
tolerance *NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance *NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 11.75
Tolerance mm : ± 0.05

<hr/>	
Del. quantity	
cm ³ /1000 strokes	: 114.0
<hr/>	
Tolerance	
cm ³ /1000 strokes	: ± 1.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: ± 3.5
<hr/>	
Spreed	
<hr/>	
Tolerance	
cm ³ /1000 strokes	: 4.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: 7.0
<hr/>	

Rated speed rpm	: 300
Rack travel in mm	: 8.10
Tolerance mm	: ± 0.10
Del. quantity	
cm ³ /1000 strokes	: 18.0
Tolerance	
cm ³ /1000 strokes	: ± 3.0
Check tolerance	
cm ³ /1000S.	: ± 5.5
Spreed	
Tolerance	
cm ³ /1000 strokes	: 4.0
Check tolerance	
cm ³ /1000S.	: 7.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 1250
guide sleeve	
travel mm	: 9.80
Tolerance mm	: ± 0.50
<hr/>	
Rated speed rpm	: 300
guide sleeve	
travel mm	: 2.20
Tolerance mm	: ± 0.10
<hr/>	
Rated speed rpm	: 650
guide sleeve	
travel mm	: 7.00
Tolerance mm	: ± 0.10
<hr/>	
Rated speed rpm	: 1200

guide sleeve	
travel mm	: 7.50
Tolerance mm	: ± 0.20

GUIDE SLEEVE POSITION

control lever	
position degree	: - 1
Rated speed rpm	: 650
<hr/>	
Rack travel in mm	: 13.50
Tolerance mm	: ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 750
Aneroid pressure	
hPa	: -
Del. quantity	
cm ³ /1000 strokes	: 114.0
Tolerance	
cm ³ /1000 strokes	: ± 1.0
Check tolerance	
cm ³ /1000S.	: ± 3.5
Spreed	
Tolerance	
cm ³ /1000 strokes	: 4.0
Check tolerance	
cm ³ /1000S.	: 7.0

CONTROL LEVER

control lever	
position degree	: 43.0
tolerance degree	: ± 4.0

RATED SPEED

rack travel mm	: 10.70
Rated speed rpm	: 1203
Tolerance 1/min	: ± 8
<hr/>	
rack travel mm	: 4.00
Rated speed rpm	: 1255
Tolerance 1/min	: ± 15
<hr/>	
rack travel mm	: 0.75
Tolerance mm	: ± 0.75
Rated speed rpm	: 1350

LOW IDLE

control lever
position degree : 18.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 8.10
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 440
Tolerance 1/min : ± 20

Rated speed rpm : 100

CRT mm min. : > 10.20

Rated speed rpm : 550

CRT mm max. : < 1.80

TORQUE CONTROL

Rated speed rpm : 750
rack travel mm : 11.75
Tolerance mm : ± 0.05

Rated speed rpm : 1150
rack travel mm : 11.75
Tolerance mm : ± 0.05

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1150
Del. quantity
cm³/1000 strokes : 134.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 140.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 5.5
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.03.97
Test oil : ISO 4113

Combination No. : 0 402 046 875

Injection pump
Pump designation : PES6P110A320RS3329Z
EP type number : 0 412 016 744

Governor
Governor design. : RQV325...1250PA1251
Governor no. : 0 421 814 164

Cust. part No. : 1309376/0

Customer-spec. information
Customer : DAF
Motor : NS150M
Power KW : 156.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 160
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 144.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 325

Rack travel in mm : 4.50
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : ± 2.5
Check tolerance
cm³/1000S. : ± 5.0

Speed
Tolerance
cm³/1000 strokes : 12.0
Check tolerance
cm³/1000S. : 15.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1298
guide sleeve
travel mm : 10.25
Tolerance mm : ± 0.15

Rated speed rpm : 325
guide sleeve
travel mm : 1.25
Tolerance mm : ± 0.20

Rated speed rpm : 863
guide sleeve
travel mm : 5.41
Tolerance mm : ± 0.25

Rated speed rpm : 520
guide sleeve
travel mm : 3.02

Tolerance mm : ± 0.25

Rated speed rpm : 1510
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1370

Rack travel in mm : 10.85
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 144.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 123.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 10.85
Rated speed rpm : 1300
Tolerance 1/min : ± 5
Check
speed 1/min : ± 10

rack travel mm : 4.00
Rated speed rpm : 1375
Tolerance 1/min : ± 15
Check
speed 1/min : ± 20

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 76.0
tolerance degree : +- 4.0

Testing:

Rated speed rpm : 325
rack travel mm : 4.50
Tolerance mm : +- 0.10

Rated speed rpm : 225

CRT mm min. : > 6.00

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.85
Tolerance mm : +- 0.05

Rated speed rpm : 700
rack travel mm : 11.85
Tolerance mm : +- 0.10

Rated speed rpm : 1250
rack travel mm : 11.85
Tolerance mm : +- 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1500
rack travel mm : 11.85
Tolerance mm : +- 0.05

Pressure hPa : -
Rated speed rpm : 600
rack travel mm : 7.35
Tolerance mm : +- 0.20

MEASUREMENT

Rated speed rpm : 600

Pressure hPa : 370

rack travel mm : 10.75
Tolerance mm : +- 0.05

Pressure hPa : 200
rack travel mm : 8.40
Tolerance mm : +- 0.10

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 94.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 3.5

LOW IDLE

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : +- 2.5
Check tolerance
cm³/1000S. : +- 5.0

Spread
Tolerance
cm³/1000 strokes : 12.0
Check tolerance
cm³/1000S. : 15.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.03.97
Test oil : ISO 4113
Combination No. : 0 402 646 670
Injection pump
Pump designation : PE6P120A320RS7438
EP type number : 0 412 626 965
Governor
Governor design. : RQV275...1150PA1296K
Governor no. : 0 421 815 523

Cust. part No. : 1316183

Customer-spec. information
Customer : DAF
Motor : PF 235 M
Power KW : 230.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 000
Inlet press. bar : 1.5
Tolerance bar : ± 0.1
Overflow quantity
min. l/h : 150
Tolerance l/h : ± 20.0
Test nozzle holde
assembly : 1 688 901 105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 4.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50
Start of delivery mark
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850
Rack travel in mm : 13.50
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 259.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 5.00
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1201
guide sleeve
travel mm : 10.07
Tolerance mm : + 0.15

Rated speed rpm : 275
guide sleeve
travel mm : 1.71
Tolerance mm : + 0.20

Rated speed rpm : 811
guide sleeve
travel mm : 6.79
Tolerance mm : + 0.25

Rated speed rpm : 450
guide sleeve
travel mm : 3.85

Tolerance mm : + 0.25

Rated speed rpm : 1480
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1321

Rack travel in mm : 12.25
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 259.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 119.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.30
Rated speed rpm : 1215
Tolerance 1/min : + 5
Check
speed 1/min : + 10

rack travel mm : 4.00
Rated speed rpm : 1340
Tolerance 1/min : + 15
Check
speed 1/min : + 20

rack travel mm : 0.70
Tolerance mm : + 0.70
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 70.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 5.00
Tolerance mm : ± 0.10

Rated speed rpm : 175

CRT mm min. : > 7.60

Rated speed rpm : 395

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 13.50
Tolerance mm : ± 0.05

Rated speed rpm : 1130
rack travel mm : 13.30
Tolerance mm : ± 0.10

Rated speed rpm : 1000
rack travel mm : 13.35
Tolerance mm : ± 0.10

Rated speed rpm : 800
rack travel mm : 13.45
Tolerance mm : ± 0.10

Rated speed rpm : 650
rack travel mm : 12.85
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 12.10
Tolerance mm : ± 0.10

Rated speed rpm : 1150
rack travel mm : 13.30
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

G09

Rated speed rpm : 875
Pressure hPa : 1500
rack travel mm : 13.50
Tolerance mm : ± 0.10

Pressure hPa : -
Rated speed rpm : 875
rack travel mm : 9.15
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 875

Pressure hPa : 390
rack travel mm : 12.20
Tolerance mm : ± 0.05

Pressure hPa : 130
rack travel mm : 10.10
Tolerance mm : ± 0.10

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1130
Del. quantity
cm³/1000 strokes : 238.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 170.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

LOW IDLE

Rated speed rpm : 275
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000s. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.03.97
Test oil : ISO 4113
Combination No. : 0 402 646 671
Injection pump
Pump designation : PE6P120A320RS7421
EP type number : 0 412 626 956
Governor
Governor design. : RQV275...1150PA1297K
Governor no. : 0 421 815 524

Cust. part No. : 1316184/1

Customer-spec. information

Customer : DAF
Motor : PF 205 M
Power KW : 205.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. L/h : 160
Tolerance L/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 12.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 231.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 4.90
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1206
guide sleeve
travel mm : 10.12
Tolerance mm : + 0.15

Rated speed rpm : 275
guide sleeve
travel mm : 1.71
Tolerance mm : + 0.20

Rated speed rpm : 813
guide sleeve
travel mm : 6.81
Tolerance mm : + 0.25

Rated speed rpm : 450
guide sleeve
travel mm : 3.85

Tolerance mm : + 0.25

Rated speed rpm : 1480
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1329

Rack travel in mm : 11.10
Tolerance mm : + 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 231.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.10
Rated speed rpm : 1195
Tolerance 1/min : + 5
Check
speed 1/min : + 10

rack travel mm : 4.00
Rated speed rpm : 1300
Tolerance 1/min : + 15
Check
speed 1/min : + 20

rack travel mm : 0.70
Tolerance mm : + 0.70
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 71.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 4.90
Tolerance mm : + 0.10

Rated speed rpm : 175

CRT mm min. : > 7.50

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 12.35
Tolerance mm : + 0.05

Rated speed rpm : 1130
rack travel mm : 12.10
Tolerance mm : + 0.10

Rated speed rpm : 1000
rack travel mm : 12.15
Tolerance mm : + 0.10

Rated speed rpm : 800
rack travel mm : 12.25
Tolerance mm : + 0.10

Rated speed rpm : 650
rack travel mm : 11.50
Tolerance mm : + 0.10

Rated speed rpm : 500
rack travel mm : 10.85
Tolerance mm : + 0.10

Rated speed rpm : 1150
rack travel mm : 12.10
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

G13

Rated speed rpm : 875
Pressure hPa : 1500
rack travel mm : 12.35
Tolerance mm : + 0.10

Pressure hPa : -
Rated speed rpm : 875
rack travel mm : 8.00
Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 875

Pressure hPa : 420
rack travel mm : 11.35
Tolerance mm : + 0.05

Pressure hPa : 150
rack travel mm : 9.20
Tolerance mm : + 0.10

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1130
Del. quantity
cm³/1000 strokes : 207.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000s. : + 5.0

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 138.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000s. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

LOW IDLE

Rated speed rpm : 275
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.03.97
Test oil : ISO 4113

Combination No. : 0 402 646 672

Injection pump
Pump designation : PE6P120A320RS7421
EP type number : 0 412 626 956

Governor
Governor design. : RQV275...1150PA1298K
Governor no. : 0 421 815 525

Cust. part No. : 1316185/1

Customer-spec. information

Customer : DAF
Motor : PF 183 M
Power KW : 183.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 150
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 11.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 206.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 4.90
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1200
guide sleeve
travel mm : 10.06
Tolerance mm : ± 0.15

Rated speed rpm : 275
guide sleeve
travel mm : 1.71
Tolerance mm : ± 0.20

Rated speed rpm : 811
guide sleeve
travel mm : 6.79
Tolerance mm : ± 0.25

Rated speed rpm : 450
guide sleeve
travel mm : 3.85

Tolerance mm : ± 0.25

Rated speed rpm : 1480
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1343

Rack travel in mm : 9.80
Tolerance mm : ± 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 206.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 117.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 9.80
Rated speed rpm : 1190
Tolerance 1/min : ± 5
Check
speed 1/min : ± 10

rack travel mm : 4.00
Rated speed rpm : 1285
Tolerance 1/min : ± 15
Check
speed 1/min : ± 20

rack travel mm : 0.70
Tolerance mm : ± 0.70
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 72.0
tolerance degree : +- 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 4.90
Tolerance mm : +- 0.10

Rated speed rpm : 175

CRT mm min. : > 7.50

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 11.05
Tolerance mm : +- 0.05

Rated speed rpm : 1130
rack travel mm : 10.80
Tolerance mm : +- 0.10

Rated speed rpm : 1000
rack travel mm : 10.90
Tolerance mm : +- 0.10

Rated speed rpm : 800
rack travel mm : 10.90
Tolerance mm : +- 0.10

Rated speed rpm : 650
rack travel mm : 10.10
Tolerance mm : +- 0.10

Rated speed rpm : 500
rack travel mm : 9.35
Tolerance mm : +- 0.10

Rated speed rpm : 1150
rack travel mm : 10.80
Tolerance mm : +- 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

G17

Rated speed rpm : 875
Pressure hPa : 1500
rack travel mm : 11.10
Tolerance mm : +- 0.10

Pressure hPa : -
Rated speed rpm : 875
rack travel mm : 8.00
Tolerance mm : +- 0.10

MEASUREMENT

Rated speed rpm : 875

Pressure hPa : 350
rack travel mm : 10.20
Tolerance mm : +- 0.05

Pressure hPa : 130
rack travel mm : 8.40
Tolerance mm : +- 0.10

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1130
Del. quantity
cm³/1000 strokes : 184.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 5.0

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 138.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

LOW IDLE

Rated speed rpm : 275
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.03.97
Test oil : ISO 4113

Combination No. : 0 402 646 673

Injection pump
Pump designation : PE6P120A320RS7412
EP type number : 0 412 626 953

Governor
Governor design. : RQV275...1000PA1300K
Governor no. : 0 421 815 527

Cust. part No. : 1315099

Customer-spec. information

Customer : DAF
Motor : XF 250 M
Power KW : 250.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 150
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 11.40
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 289.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 3.20
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1072
guide sleeve
travel mm : 10.16
Tolerance mm : ± 0.15

Rated speed rpm : 275
guide sleeve
travel mm : 2.04
Tolerance mm : ± 0.20

Rated speed rpm : 701
guide sleeve
travel mm : 6.52
Tolerance mm : ± 0.25

Rated speed rpm : 400
guide sleeve
travel mm : 3.92

Tolerance mm : ± 0.25

Rated speed rpm : 1310
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1181

Rack travel in mm : 10.00
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 289.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 9.90
Rated speed rpm : 1045
Tolerance 1/min : ± 5
Check
speed 1/min : ± 10

rack travel mm : 4.00
Rated speed rpm : 1135
Tolerance 1/min : ± 15
Check
speed 1/min : ± 20

rack travel mm : 0.70
Tolerance mm : ± 0.70
Rated speed rpm : 1275

LOW IDLE

control lever
position degree : 70.0
tolerance degree : +- 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 3.20
Tolerance mm : +- 0.10

Rated speed rpm : 175

CRT mm min. : > 6.50

Rated speed rpm : 310

TORQUE CONTROL

Rated speed rpm : 750
rack travel mm : 11.40
Tolerance mm : +- 0.05

Rated speed rpm : 980
rack travel mm : 10.90
Tolerance mm : +- 0.10

Rated speed rpm : 900
rack travel mm : 11.10
Tolerance mm : +- 0.10

Rated speed rpm : 700
rack travel mm : 11.30
Tolerance mm : +- 0.10

Rated speed rpm : 600
rack travel mm : 10.80
Tolerance mm : +- 0.10

Rated speed rpm : 500
rack travel mm : 10.40
Tolerance mm : +- 0.10

Rated speed rpm : 1000
rack travel mm : 10.90
Tolerance mm : +- 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

G21

Rated speed rpm : 775
Pressure hPa : 1500
rack travel mm : 11.35
Tolerance mm : +- 0.05

Pressure hPa : -
Rated speed rpm : 775
rack travel mm : 7.90
Tolerance mm : +- 0.20

MEASUREMENT

Rated speed rpm : 775

Pressure hPa : 460
rack travel mm : 10.40
Tolerance mm : +- 0.05

Pressure hPa : 250
rack travel mm : 8.80
Tolerance mm : +- 0.10

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 980
Del. quantity
cm³/1000 strokes : 250.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000s. : +- 5.0

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 188.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000s. : +- 4.0

LOW IDLE

Rated speed rpm : 275
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000s. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.03.97
Test oil : ISO 4113

Combination No. : 0 402 648 783

Injection pump
Pump designation : PE8P120A320LS7906-1
EP type number : 0 412 628 925

Governor
Governor design. : RQ750PA1326
Governor no. : 0 421 801 815

Cust. part No. : 04222 3938 KY

Customer-spec. information

Customer : KHD
Motor : BF8M1015/C
Power KW : 318.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 033

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 200
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 8- 7- 2- 6- 5
 : - 3- 1

Phasing : 0-45-90-135-180
 : -270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery blocking

*NW after s.o.d. : 315.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.60
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 365.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 715
guide sleeve
travel mm : 4.23
Tolerance mm : + 0.15

Rated speed rpm : 610
guide sleeve
travel mm : 0.72
Tolerance mm : + 0.25

Rated speed rpm : 900
guide sleeve
travel mm : 14.89
Tolerance mm : + 0.25

Rated speed rpm : 862

guide sleeve
travel mm : 12.00
Tolerance mm : + 0.25

Rated speed rpm : 930
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 365.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 112.0
tolerance degree : + 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
rack travel mm : 11.60

Rated speed rpm : 780
Tolerance 1/min : + 4
rack travel mm : 5.50

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 900

Rated speed rpm : 751
rack travel mm : 11.60

Rated speed rpm : 781
Tolerance 1/min : + 4
rack travel mm : 5.50

rack travel mm : 0.50
Tolerance mm : + 0.50

Rated speed rpm : 752
rack travel mm : 11.60

Rated speed rpm : 782
Tolerance 1/min : + 4
rack travel mm : 5.50

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 900

Rated speed rpm : 753
rack travel mm : 11.60

Rated speed rpm : 783
Tolerance 1/min : + 4
rack travel mm : 5.50

rack travel mm : 0.50
Tolerance mm : + 0.50

Rated speed rpm : 754
rack travel mm : 11.60

Rated speed rpm : 784
Tolerance 1/min : + 4
rack travel mm : 5.50

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 900

Rated speed rpm : 755
rack travel mm : 11.60

Rated speed rpm : 785
Tolerance 1/min : + 4
rack travel mm : 5.50

rack travel mm : 0.50
Tolerance mm : + 0.50

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.60
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 560

Check speed 1/min : > 80
Check speed 1/min : < 580

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : + 0.75
Del. quantity cm³/1000 strokes : 200.0
Tolerance cm³/1000 strokes : + 15.0
Check tolerance cm³/1000S. : + 19.0

LOW IDLE

Rated speed rpm : 300
Del. quantity cm³/1000 strokes : 20.0
Tolerance cm³/1000 strokes : + 3.0
Check tolerance cm³/1000S. : + 6.0
Speed Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.03.97
Test oil : ISO 4113

Combination No. : 0 402 678 837

Injection pump
Pump designation : PE8P120A320LS7911
EP type number : 0 412 628 926

Governor
Governor design. : RSV550...1050POA679
Governor no. : 0 421 833 598

Cust. part No. : 027 074 6502

Customer-spec. information
Customer : M3-NFZ
Motor : OM442LA, Euro
Power KW : 320.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
: - 4- 1

Phasing : 0-45-90-135-180
: -270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1080

Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 225.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 550

Rack travel in mm : 4.10
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Spreed

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1080

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 225.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1111
Tolerance 1/min : + 1

Rated speed rpm : 1144
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

Rated speed rpm : 1113
Tolerance 1/min : + 1

Rated speed rpm : 1146
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

Rated speed rpm : 1115
Tolerance 1/min : + 1

Rated speed rpm : 1148
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

Rated speed rpm : 1117
Tolerance 1/min : + 1

Rated speed rpm : 1150
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

Rated speed rpm : 1119
Tolerance 1/min : + 1

Rated speed rpm : 1152
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

Rated speed rpm : 1154
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

LOW IDLE

Testing:

Rated speed rpm : 550
rack travel mm : 4.10
Tolerance mm : + 0.10

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1080
Tolerance mm : + 0.05

Rated speed rpm : 600
Tolerance mm : + 0.10

Tolerance mm : + 0.10

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 600

Del. quantity
cm³/1000 strokes : 242.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 5.0
Spræd
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : + 2.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 15.00
Tolerance mm : + 0.20
Del. quantity
cm³/1000 strokes : 225.0
Tolerance
cm³/1000 strokes : + 10.0
Check tolerance
cm³/1000S. : + 14.0

LOW IDLE

Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spræd
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.03.97
Test oil : ISO 4113

Combination No. : 0 402 746 632

Injection pump
Pump designation : PES6P120A720RS7366
EP type number : 0 412 726 933

Governor
Governor design. : RQ300/1050PA1340
Governor no. : 0 421 801 820

Cust. part No. :

Customer-spec. information
Customer : IVECO-FRANCE
Motor : 8460.41S.7031
Power kW : 254.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 160
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Check
tolerance °NW : ± 0.40

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 290.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.50
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1110
guide sleeve
travel mm : 6.85
Tolerance mm : ± 0.15

Rated speed rpm : 300
guide sleeve
travel mm : 1.97
Tolerance mm : ± 0.20

Rated speed rpm : 1050
guide sleeve
travel mm : 6.50
Tolerance mm : ± 0.10

Rated speed rpm : 697
guide sleeve
travel mm : 6.13

H02

Tolerance mm : ± 0.10

Rated speed rpm : 399
guide sleeve
travel mm : 4.74
Tolerance mm : ± 0.10

Rated speed rpm : 480
guide sleeve
travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 1270
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

Rated speed rpm : 877
guide sleeve
travel mm : 6.38
Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 1139

Rack travel in mm : 11.90
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 290.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED
rack travel mm : 11.90
Rated speed rpm : 1103
Tolerance 1/min : ± 8

Check
speed 1/min : ± 13

rack travel mm : 4.00

Rated speed rpm : 1180
Tolerance 1/min : + 15
Check
speed 1/min : + 20

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.50
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 386
Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > 8.15

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 12.95
Tolerance mm : + 0.05

Rated speed rpm : 500
rack travel mm : 14.10
Tolerance mm : + 0.10

Rated speed rpm : 700
rack travel mm : 13.90
Tolerance mm : + 0.10

Rated speed rpm : 875
rack travel mm : 13.20
Tolerance mm : + 0.15

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500

H03

Pressure hPa : 1200
rack travel mm : 14.10
Tolerance mm : + 0.05

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.65
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 250
rack travel mm : 10.15
Tolerance mm : + 0.20

Pressure hPa : 500
rack travel mm : 12.40
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 250

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 331.0
Tolerance
cm³/1000 strokes : + 4.0
Check tolerance
cm³/1000S. : + 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.65

Tolerance mm : +- 0.30
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : +- 15.0
Check tolerance
cm³/1000S. : +- 19.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.03.97
Test oil : ISO 4113

Combination No. : 0 402 746 633

Injection pump
Pump designation : PES6P120A72ORS7366
EP type number : 0 412 726 933

Governor
Governor design. : RQ300/1050PA1344
Governor no. : 0 421 801 821

Cust. part No. :

Customer-spec. information
Customer : IVECO-FRANCE
Motor : 8460.41R.7143
Power KW : 214.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. L/h : 160
Tolerance L/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Check
tolerance °NW : ± 0.40

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 11.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 234.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.50
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 500

Rack travel in mm : 20.00
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 234.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED

rack travel mm : 10.50
Rated speed rpm : 1103
Tolerance 1/min : ± 8
Check
speed 1/min : ± 13

rack travel mm : 4.00
Rated speed rpm : 1170
Tolerance 1/min : ± 15
Check
speed 1/min : ± 20

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 74.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.50
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 385
Tolerance 1/min : ± 20

Rated speed rpm : 200

CRT mm min. : > 7.00

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 11.55
Tolerance mm : ± 0.05

Rated speed rpm : 500

rack travel mm : 12.75
Tolerance mm : +- 0.10

Rated speed rpm : 700
rack travel mm : 12.50
Tolerance mm : +- 0.10

Rated speed rpm : 875
rack travel mm : 11.80
Tolerance mm : +- 0.15

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1200
rack travel mm : 12.80
Tolerance mm : +- 0.05

Pressure hPa : --
Rated speed rpm : 600
rack travel mm : 9.60
Tolerance mm : +- 0.20

MEASUREMENT

Rated speed rpm : 600

Pressure hPa : 260
rack travel mm : 10.40
Tolerance mm : +- 0.20

Pressure hPa : 420
rack travel mm : 12.00
Tolerance mm : +- 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 250

Check
speed 1/min : > 80
Check
speed 1/min : < 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 264.0
Tolerance
cm³/1000 strokes : +- 4.0

Check tolerance
cm³/1000S. : +- 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 152.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.60
Tolerance mm : +- 0.30
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : +- 15.0
Check tolerance
cm³/1000S. : +- 19.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.03.97
Test oil : ISO 4113

Combination No. : 0 402 846 061

Injection pump
Pump designation : PE6P120A32ORS8024-1
EP type number : 0 412 826 029

Governor
Governor design. : RQV250...1100PA1072
: 3K
Governor no. : 0 421 815 979

Cust. part No. : 477950-P05 v. 11.95

Customer-spec. information
Customer : VOLVO-TRUCK
Motor : TD74 EU
Power KW : 169.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 089

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 7.20
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.40
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 175.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 300

Rack travel in mm : 4.40
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : + 2.5

Check tolerance
cm³/1000S. : + 5.0

Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1176
guide sleeve
travel mm : 10.15
Tolerance mm : + 0.25

Rated speed rpm : 250
guide sleeve
travel mm : 1.33
Tolerance mm : + 0.25

Rated speed rpm : 733
guide sleeve
travel mm : 5.39
Tolerance mm : + 0.25

Rated speed rpm : 307
guide sleeve
travel mm : 2.29
Tolerance mm : + 0.25

Rated speed rpm : 357
guide sleeve
travel mm : 2.97
Tolerance mm : + 0.25

Rated speed rpm : 390
guide sleeve
travel mm : 3.22
Tolerance mm : + 0.25

Rated speed rpm : 1390
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1290

Rack travel in mm : 7.50
Tolerance mm : + 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 175.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 11.0

CONTROL LEVER

control lever
position degree : 72.0
tolerance degree : + 4.0

control lever
position degree : 118.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 10.40
Rated speed rpm : 1135
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1210
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1320

LOW IDLE

control lever
position degree : 65.0
tolerance degree : ± 4.0

control lever
position degree : 19.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.40
Tolerance mm : ± 0.10

Rated speed rpm : 200

CRT mm min. : > 6.50

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.40
Tolerance mm : ± 0.05

Rated speed rpm : 650
rack travel mm : 9.10
Tolerance mm : ± 0.10

Rated speed rpm : 300
rack travel mm : 8.30
Tolerance mm : ± 0.30

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 1500
rack travel mm : 11.40
Tolerance mm : ± 0.10

Pressure hPa : -
Rated speed rpm : 1100

rack travel mm : 7.20
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 1100

Pressure hPa : 580
rack travel mm : 3.50
Tolerance mm : ± 0.20

Pressure hPa : 120
rack travel mm : 0.25
Tolerance mm : ± 0.05

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 650

Del. quantity
cm³/1000 strokes : 159.0
Tolerance

cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0

Speed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

Aneroid pressure
hPa : -
Rated speed rpm : 650

Del. quantity
cm³/1000 strokes : 114.0
Tolerance

cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : ± 2.5
Check tolerance
cm³/1000S. : ± 5.0

Speed

Tolerance

cm³/1000 strokes : 5.0

Check tolerance

cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.03.97
Test oil : ISO 4113

Combination No. : 0 402 846 062

Injection pump
Pump designation : PE6P120A320RS8024-1
EP type number : 0 412 826 029

Governor
Governor design. : RQV250...1100PA1072
: 4K
Governor no. : 0 421 815 978

Cust. part No. : 477951-P05 v. 11.95

Customer-spec. information
Customer : VOLVO-TRUCK
Motor : TD74 EU
Power KW : 191.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 089

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 7.60
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.50
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 189.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 300

Rack travel in mm : 4.80
Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : +- 2.5

Check tolerance
cm³/1000S. : +- 5.0

Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1176
guide sleeve
travel mm : 10.15
Tolerance mm : +- 0.25

Rated speed rpm : 250
guide sleeve
travel mm : 1.33
Tolerance mm : +- 0.25

Rated speed rpm : 733
guide sleeve
travel mm : 5.39
Tolerance mm : +- 0.25

Rated speed rpm : 307
guide sleeve
travel mm : 2.29
Tolerance mm : +- 0.25

Rated speed rpm : 357
guide sleeve
travel mm : 2.97
Tolerance mm : +- 0.25

Rated speed rpm : 390
guide sleeve
travel mm : 3.22
Tolerance mm : +- 0.25

Rated speed rpm : 1390
guide sleeve
travel mm : 13.50
Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1290

Rack travel in mm : 7.50
Tolerance mm : +- 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 189.0
Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 11.0

CONTROL LEVER

control lever
position degree : 66.0
tolerance degree : +- 4.0

control lever
position degree : 119.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 11.50
Rated speed rpm : 1135
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 1220
Tolerance 1/min : +- 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1320

LOW IDLE

control lever
position degree : 72.0
tolerance degree : ± 4.0

control lever
position degree : 19.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.80
Tolerance mm : ± 0.10

Rated speed rpm : 200

CRT mm min. : > 6.70

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.50
Tolerance mm : ± 0.05

Rated speed rpm : 650
rack travel mm : 12.30
Tolerance mm : ± 0.10

Rated speed rpm : 300
rack travel mm : 10.50
Tolerance mm : ± 0.30

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 1500
rack travel mm : 12.50
Tolerance mm : ± 0.10

Pressure hPa : -
Rated speed rpm : 1100

rack travel mm : 7.75
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 1100

Pressure hPa : 750
rack travel mm : 4.20
Tolerance mm : ± 0.20

Pressure hPa : 200
rack travel mm : 0.25
Tolerance mm : ± 0.05

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 650

Del. quantity
cm³/1000 strokes : 225.0

Tolerance
cm³/1000 strokes : ± 2.5

Check tolerance
cm³/1000S. : ± 5.0

Spread
Tolerance
cm³/1000 strokes : 10.0

Check tolerance
cm³/1000S. : 14.0

Aneroid pressure
hPa : -

Rated speed rpm : 650

Del. quantity
cm³/1000 strokes : 115.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : ± 2.5

Check tolerance
cm³/1000S. : ± 5.0

Spreed

Tolerance

cm³/1000 strokes : 5.0

Check tolerance

cm³/1000s. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.03.97
Test oil : ISO 4113
Combination No. : 0 402 846 063
Injection pump
Pump designation : PE6P120A320RS8024-1
EP type number : 0 412 826 029
Governor
Governor design. : RQV250...1100PA1072
: 5K
Governor no. : 0 421 815 977
Cust. part No. : 477952-P05 v. 11.95

Customer-spec. information

Customer : VOLVO-TRUCK
Motor : TD74 EU
Power KW : 210.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 089
Inlet press. bar : 2.5
Tolerance bar : ± 0.1
Test nozzle holder
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 7.60
Tolerance mm : ± 0.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50
Start of delivery mark
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100
Rack travel in mm : 13.60
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 211.0
Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
 cm³/1000S. : + 4.0

 Spread

 Tolerance
 cm³/1000 strokes : 8.0

 Check tolerance
 cm³/1000S. : 11.0

Rated speed rpm : 300

 Rack travel in mm : 4.80
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 23.0
 Tolerance
 cm³/1000 strokes : + 2.5
 Check tolerance
 cm³/1000S. : + 5.0
 Spread
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1176
 guide sleeve
 travel mm : 10.15
 Tolerance mm : + 0.25

 Rated speed rpm : 250
 guide sleeve
 travel mm : 1.33
 Tolerance mm : + 0.25

 Rated speed rpm : 733
 guide sleeve
 travel mm : 5.39
 Tolerance mm : + 0.25

 Rated speed rpm : 307
 guide sleeve
 travel mm : 2.29
 Tolerance mm : + 0.25

 Rated speed rpm : 357
 guide sleeve
 travel mm : 2.97
 Tolerance mm : + 0.25

Rated speed rpm : 390
 guide sleeve
 travel mm : 3.22
 Tolerance mm : + 0.25

Rated speed rpm : 1390
 guide sleeve
 travel mm : 13.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1290

Rack travel in mm : 7.50
 Tolerance mm : + 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
 Aneroid pressure
 hPa : 1500
 Del. quantity
 cm³/1000 strokes : 211.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 11.0

CONTROL LEVER

control lever
 position degree : 68.0
 tolerance degree : + 4.0

control lever
 position degree : 120.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.60
 Rated speed rpm : 1135
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1230
 Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1320

LOW IDLE

control lever
position degree : 72.0
tolerance degree : ± 4.0

control lever
position degree : 20.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.80
Tolerance mm : ± 0.10

Rated speed rpm : 200

CRT mm min. : > 6.70

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 13.60
Tolerance mm : ± 0.05

Rated speed rpm : 650
rack travel mm : 13.10
Tolerance mm : ± 0.10

Rated speed rpm : 300
rack travel mm : 11.50
Tolerance mm : ± 0.30

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 1500
rack travel mm : 13.60
Tolerance mm : ± 0.10

Pressure hPa : -
Rated speed rpm : 1100

rack travel mm : 7.75
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 1100

Pressure hPa : 885
rack travel mm : 5.50
Tolerance mm : ± 0.20

Pressure hPa : 190
rack travel mm : 0.25
Tolerance mm : ± 0.05

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 650

Del. quantity
cm³/1000 strokes : 248.0
Tolerance
cm³/1000 strokes : ± 2.5

Check tolerance
cm³/1000S. : ± 5.0

Spread
Tolerance
cm³/1000 strokes : 10.0

Check tolerance
cm³/1000S. : 14.0

Aneroid pressure
hPa : -
Rated speed rpm : 650

Del. quantity
cm³/1000 strokes : 115.0
Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : ± 2.5

Check tolerance
cm³/1000S. : ± 5.0

Speed

Tolerance

cm³/1000 strokes : 5.0

Check tolerance

cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.03.97
Test oil : ISO 4113

Combination No. : 0 402 946 015

Injection pump
Pump designation : PES6P120A320RS8038
EP type number : 0 412 926 025

Governor
Governor design. : RQV250...1000PA1239
Governor no. : 0 421 814 157

Cust. part No. : 1383795

Customer-spec. information
Customer : SCANIA
Motor : DSC 913

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 105
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

H20

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery blocking
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.70
Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	: 300.0
Tolerance cm ³ /1000 strokes	: + 1.0
Check tolerance cm ³ /1000S.	: + 8.0
Spreed	
Tolerance cm ³ /1000 strokes	: 8.0
Check tolerance cm ³ /1000S.	: 12.0

Rated speed rpm : 250

Rack travel in mm : 7.50
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1057
guide sleeve
travel mm : 7.89
Tolerance mm : + 0.15

Rated speed rpm : 250
guide sleeve
travel mm : 1.33
Tolerance mm : + 0.20

Rated speed rpm : 748
guide sleeve
travel mm : 6.17
Tolerance mm : + 0.25

Rated speed rpm : 322

guide sleeve
travel mm : 2.58
Tolerance mm : + 0.25

Rated speed rpm : 372
guide sleeve
travel mm : 3.27
Tolerance mm : + 0.25

Rated speed rpm : 470
guide sleeve
travel mm : 4.09
Tolerance mm : + 0.25

Rated speed rpm : 1470
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1260

Rack travel in mm : 11.40
Tolerance mm : + 1.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 300.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 8.0

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 57.0
tolerance degree : + 4.0

control lever
position degree : 120.0
tolerance degree : + 4.0

RATED SPEED
 rack travel mm : 11.70
 Rated speed rpm : 1045
 Tolerance 1/min : + 5
 Check
 speed 1/min : + 10

 rack travel mm : 4.00
 Rated speed rpm : 1235
 Tolerance 1/min : + 15
 Check
 speed 1/min : + 20

 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1350

LOW IDLE

control lever
 position degree : 87.0
 tolerance degree : + 4.0

control lever
 position degree : 25.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 250
 rack travel mm : 7.50
 Tolerance mm : + 0.10

Rated speed rpm : 150

CRT mm min. : > 9.80

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 600
 rack travel mm : 12.70
 Tolerance mm : + 0.05

Rated speed rpm : 1000
 rack travel mm : 12.70
 Tolerance mm : + 0.10

ANEROID/ALTITUDE
 COMPENSATOR TEST

SETTING

Rated speed rpm : 500
 Pressure hPa : 1500
 rack travel mm : 12.70
 Tolerance mm : + 0.05

Pressure hPa : -
 Rated speed rpm : 500
 rack travel mm : 10.80
 Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 380
 rack travel mm : 11.25
 Tolerance mm : + 0.15

Pressure hPa : 760
 rack travel mm : 12.15
 Tolerance mm : + 0.05

Start interlock

Rated speed rpm : < 170
 Rated speed rpm : > 100

Check
 speed 1/min : < 190
 Check
 speed 1/min : > 80

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 1500
 Rated speed rpm : 1000
 Del. quantity
 cm³/1000 strokes : 290.0
 Tolerance
 cm³/1000 strokes : + 4.0
 Check tolerance
 cm³/1000S. : + 8.0

Aneroid pressure
 hPa : -
 Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 210.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 265.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 250
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.03.97
Test oil : ISO 4113

Combination No. : 0 402 946 016

Injection pump
Pump designation : PES6P120A320RS8038
EP type number : 0 412 923 025

Governor
Governor design. : RQV250...1000PA1239
: 1
Governor no. : 0 421 814 158

Cust. part No. : 1369528

Customer-spec. information
Customer : SCANIA
Motor : DSC 912

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery blocking
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.80
Tolerance mm : ± 0.05

<hr/>	
Del. quantity	
cm ³ /1000 strokes	: 292.0
<hr/>	
Tolerance	
cm ³ /1000 strokes	: ± 1.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: ± 9.0
<hr/>	
Speed	
<hr/>	
Tolerance	
cm ³ /1000 strokes	: 8.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: 12.0
<hr/>	

Rated speed rpm	: 250
<hr/>	
Rack travel in mm	: 7.50
Tolerance mm	: ± 0.10
Del. quantity	
cm ³ /1000 strokes	: 40.0
Tolerance	
cm ³ /1000 strokes	: ± 3.0
Check tolerance	
cm ³ /1000S.	: ± 6.0
Speed	
<hr/>	
Tolerance	
cm ³ /1000 strokes	: 4.0
Check tolerance	
cm ³ /1000S.	: 8.0

(9) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 1057
guide sleeve	
travel mm	: 7.89
Tolerance mm	: ± 0.15
<hr/>	
Rated speed rpm	: 250
guide sleeve	
travel mm	: 1.33
Tolerance mm	: ± 0.20
<hr/>	
Rated speed rpm	: 748
guide sleeve	
travel mm	: 6.17
Tolerance mm	: ± 0.25
<hr/>	
Rated speed rpm	: 322

guide sleeve	
travel mm	: 2.58
Tolerance mm	: ± 0.25
<hr/>	
Rated speed rpm	: 372
guide sleeve	
travel mm	: 3.27
Tolerance mm	: ± 0.25
<hr/>	
Rated speed rpm	: 470
guide sleeve	
travel mm	: 4.09
Tolerance mm	: ± 0.25
<hr/>	
Rated speed rpm	: 1470
guide sleeve	
travel mm	: 11.50
Tolerance mm	: ± 0.50

GUIDE SLEEVE POSITION

control lever	
position degree	: - 1
Rated speed rpm	: 1290
<hr/>	
Rack travel in mm	: 11.30
Tolerance mm	: ± 1.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 600
Aneroid pressure	
hPa	: 1500
Del. quantity	
cm ³ /1000 strokes	: 292.0
Tolerance	
cm ³ /1000 strokes	: ± 1.0
Check tolerance	
cm ³ /1000S.	: ± 9.0
Speed	
<hr/>	
Tolerance	
cm ³ /1000 strokes	: 8.0
Check tolerance	
cm ³ /1000S.	: 12.0

CONTROL LEVER

control lever	
position degree	: 57.0
tolerance degree	: ± 4.0
<hr/>	
control lever	
position degree	: 120.0
tolerance degree	: ± 4.0

RATED SPEED

rack travel mm : 11.80
Rated speed rpm : 1045
Tolerance 1/min : + 5
Check
speed 1/min : + 10

rack travel mm : 4.00
Rated speed rpm : 1225
Tolerance 1/min : + 15
Check
speed 1/min : + 20

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 87.0
tolerance degree : + 4.0

control lever
position degree : 25.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 7.50
Tolerance mm : + 0.10

Rated speed rpm : 150

CRT mm min. : > 9.70

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 12.80
Tolerance mm : + 0.05

Rated speed rpm : 1000
rack travel mm : 12.80
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.80
Tolerance mm : + 0.05

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.80
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 250
rack travel mm : 11.30
Tolerance mm : + 0.15

Pressure hPa : 620
rack travel mm : 12.30
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 170

Check
speed 1/min : > 80
Check
speed 1/min : < 190

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 282.0
Tolerance
cm³/1000 strokes : + 4.0
Check tolerance
cm³/1000S. : + 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 260.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 250
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.03.97
Test oil : ISO 4113

Combination No. : 0 402 946 020

Injection pump
Pump designation : PES6P120A320RS8038
EP type number : 0 412 926 025

Governor
Governor design. : RQV250...1000PA1239
: 2
Governor no. : 0 421 814 168

Cust. part No. : 1369545

Customer-spec. information
Customer : SCANIA
Motor : DSC 9.11

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 115
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery blocking

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.30
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 277.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 9.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 250

Rack travel in mm : 7.20
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 40.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1057
guide sleeve
travel mm : 7.89
Tolerance mm : ± 0.15

Rated speed rpm : 250
guide sleeve
travel mm : 1.33
Tolerance mm : ± 0.20

Rated speed rpm : 748
guide sleeve
travel mm : 6.17
Tolerance mm : ± 0.25

Rated speed rpm : 470

guide sleeve
travel mm : 4.09
Tolerance mm : ± 0.25

Rated speed rpm : 1470
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1310

Rack travel in mm : 11.40
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 277.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 9.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 56.0
tolerance degree : ± 4.0

control lever
position degree : 118.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 11.30

Rated speed rpm : 1045
Tolerance 1/min : ± 5

Check
speed 1/min : ± 10

rack travel mm : 4.00
Rated speed rpm : 1225

Tolerance 1/min : ± 15

Check
speed 1/min : + 20

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 87.0
tolerance degree : + 4.0

control lever
position degree : 24.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 7.20
Tolerance mm : + 0.10

Rated speed rpm : 150

CRT mm min. : > 9.70

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 12.30
Tolerance mm : + 0.05

Rated speed rpm : 1000
rack travel mm : 12.30
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.30
Tolerance mm : + 0.05

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.80
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 330
rack travel mm : 11.20
Tolerance mm : + 0.15

Pressure hPa : 600
rack travel mm : 11.90
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : < 170
Rated speed rpm : > 100

Check
speed 1/min : < 190
Check
speed 1/min : > 80

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 272.0
Tolerance
cm³/1000 strokes : + 4.0
Check tolerance
cm³/1000s. : + 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000s. : + 7.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + 0.50
Del. quantity
cm³/1000 strokes : 275.0
Tolerance
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000s. : + 24.0

LOW IDLE

Rated speed rpm : 250
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000s. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000s. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.03.97
Test oil : ISO 4113

Combination No. : 0 402 946 021

Injection pump
Pump designation : PES6P120A320RS8038
EP type number : 0 412 926 025

Governor
Governor design. : RQ250/1000PA1265
Governor no. : 0 421 801 800

Cust. part No. : 1380278

Customer-spec. information
Customer : SCANIA
Motor : DSC 9.12

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 5.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.20

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery blocking

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.80
Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	: 292.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 9.0
Spreed	
Tolerance cm ³ /1000 strokes	: 8.0
Check tolerance cm ³ /1000S.	: 12.0

Rated speed rpm	: 250
Rack travel in mm	: 7.50
Tolerance mm	: ± 0.10
Del. quantity cm ³ /1000 strokes	: 40.0
Tolerance cm ³ /1000 strokes	: ± 3.0
Check tolerance cm ³ /1000S.	: ± 6.0
Spreed	
Tolerance cm ³ /1000 strokes	: 4.0
Check tolerance cm ³ /1000S.	: 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 1062
guide sleeve travel mm	: 4.83
Tolerance mm	: ± 0.15
Rated speed rpm	: 250
guide sleeve travel mm	: 1.43
Tolerance mm	: ± 0.20
Rated speed rpm	: 970
guide sleeve travel mm	: 4.50
Tolerance mm	: ± 0.10
Rated speed rpm	: 377

guide sleeve travel mm	: 3.91
Tolerance mm	: ± 0.10
Rated speed rpm	: 490
guide sleeve travel mm	: 4.50
Tolerance mm	: ± 0.10
Rated speed rpm	: 1135
guide sleeve travel mm	: 5.50
Tolerance mm	: ± 0.10
Rated speed rpm	: 1610
guide sleeve travel mm	: 11.50
Tolerance mm	: ± 0.50

GUIDE SLEEVE POSITION

control lever position degree	: 108
Rated speed rpm	: 600
Rack travel in mm	: 16.00
Tolerance mm	: ± 1.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 600
Aneroid pressure hPa	: 1500
Del. quantity cm ³ /1000 strokes	: 292.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 9.0
Spreed	
Tolerance cm ³ /1000 strokes	: 8.0
Check tolerance cm ³ /1000S.	: 12.0

CONTROL LEVER

control lever position degree	: 47.0
tolerance degree	: ± 4.0
control lever position degree	: 109.0
tolerance degree	: ± 4.0

RATED SPEED

rack travel mm : 11.80
Rated speed rpm : 1045
Tolerance 1/min : +- 5
Check
speed 1/min : +- 10

rack travel mm : 4.00
Rated speed rpm : 1220
Tolerance 1/min : +- 15
Check
speed 1/min : +- 20

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 87.0
tolerance degree : +- 4.0

control lever
position degree : 25.0
tolerance degree : +- 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 7.50
Tolerance mm : +- 0.10

Rated speed rpm : 150

CRT mm min. : > 9.00

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 12.80
Tolerance mm : +- 0.05

Rated speed rpm : 1000
rack travel mm : 12.80
Tolerance mm : +- 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.80
Tolerance mm : +- 0.05

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.80
Tolerance mm : +- 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 250
rack travel mm : 11.30
Tolerance mm : +- 0.15

Pressure hPa : 620
rack travel mm : 12.30
Tolerance mm : +- 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 170

Check
speed 1/min : > 80
Check
speed 1/min : < 190

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1000
Del. quantity
cm3/1000 strokes : 282.0
Tolerance
cm3/1000 strokes : +- 4.0
Check tolerance
cm3/1000S. : +- 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 210.0
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000S. : +- 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 275.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 250
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.03.97
Test oil : ISO 4113
Combination No. : 0 402 946 022
Injection pump
Pump designation : PES6P120A320RS8038
EP type number : 0 412 926 025
Governor
Governor design. : RQ250/1000PA1265-1
Governor no. : 0 421 801 801

Cust. part No. : 1380280

Customer-spec. information
Customer : SCANIA
Motor : DSC 9.11

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity min. l/h : 110
Tolerance l/h : ± 20.0

Test nozzle holder assembly : 1 688 901 104

Opening pressure bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008
Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant. per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.20

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check tolerance °NW : ± 0.50

Start of delivery blocking

Tolerance : ± 0.50
Check tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.30
Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	: 277.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 8.0
Spreed	
Tolerance cm ³ /1000 strokes	: 8.0
Check tolerance cm ³ /1000S.	: 12.0

Rated speed rpm	: 250
Rack travel in mm	: 7.30
Tolerance mm	: ± 0.10
Del. quantity cm ³ /1000 strokes	: 40.0
Tolerance cm ³ /1000 strokes	: ± 3.0
Check tolerance cm ³ /1000S.	: ± 6.0
Spreed	
Tolerance cm ³ /1000 strokes	: 4.0
Check tolerance cm ³ /1000S.	: 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 1062
guide sleeve travel mm	: 4.83
Tolerance mm	: ± 0.15
Rated speed rpm	: 250
guide sleeve travel mm	: 1.43
Tolerance mm	: ± 0.20
Rated speed rpm	: 970
guide sleeve travel mm	: 4.50
Tolerance mm	: ± 0.10
Rated speed rpm	: 377

guide sleeve travel mm	: 3.91
Tolerance mm	: ± 0.10
Rated speed rpm	: 490
guide sleeve travel mm	: 4.50
Tolerance mm	: ± 0.10
Rated speed rpm	: 1135
guide sleeve travel mm	: 5.50
Tolerance mm	: ± 0.10
Rated speed rpm	: 1610
guide sleeve travel mm	: 11.50
Tolerance mm	: ± 0.50

GUIDE SLEEVE POSITION

control lever position degree	: 108
Rated speed rpm	: 600
Rack travel in mm	: 16.00
Tolerance mm	: ± 1.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 600
Aneroid pressure hPa	: 1500
Del. quantity cm ³ /1000 strokes	: 277.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 8.0
Spreed	
Tolerance cm ³ /1000 strokes	: 8.0
Check tolerance cm ³ /1000S.	: 12.0

CONTROL LEVER

control lever position degree	: 38.0
tolerance degree	: ± 4.0
control lever position degree	: 109.0
tolerance degree	: ± 4.0

RATED SPEED
 rack travel mm : 11.30
 Rated speed rpm : 1045
 Tolerance 1/min : + 5
 Check
 speed 1/min : + 10

rack travel mm : 4.00
 Rated speed rpm : 1215
 Tolerance 1/min : + 15
 Check
 speed 1/min : + 20

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1350

LOW IDLE

control lever
 position degree : 87.0
 tolerance degree : + 4.0

control lever
 position degree : 25.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 250
 rack travel mm : 7.30
 Tolerance mm : + 0.10

rack travel mm : 2.00
 Rated speed rpm : 350
 Tolerance 1/min : + 20

Rated speed rpm : 150

CRT mm min. : > 9.00

TORQUE CONTROL

Rated speed rpm : 600
 rack travel mm : 12.30
 Tolerance mm : + 0.05

Rated speed rpm : 1000
 rack travel mm : 12.30
 Tolerance mm : + 0.05

ANEROID/ALTITUDE
 COMPENSATOR TEST

SETTING

Rated speed rpm : 500
 Pressure hPa : 1500
 rack travel mm : 12.30
 Tolerance mm : + 0.05

Pressure hPa : -
 Rated speed rpm : 500
 rack travel mm : 10.80
 Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 330
 rack travel mm : 11.20
 Tolerance mm : + 0.15

Pressure hPa : 600
 rack travel mm : 11.90
 Tolerance mm : + 0.05

Start interlock

Rated speed rpm : < 170
 Rated speed rpm : > 100

Check
 speed 1/min : < 190
 Check
 speed 1/min : > 80

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 1500
 Rated speed rpm : 1000
 Del. quantity
 cm³/1000 strokes : 272.0
 Tolerance
 cm³/1000 strokes : + 4.0
 Check tolerance
 cm³/1000S. : + 8.0

Aneroid pressure
 hPa : -
 Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 210.0
 Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : ± 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 270.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 250
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.03.97
Test oil : ISO 4113

Combination No. : 0 402 946 023

Injection pump
Pump designation : PES6P120A320RS8038
EP type number : 0 412 926 025

Governor
Governor design. : RQ250/1000PA1265-2
Governor no. : 0 421 801 808

Cust. part No. : 1385102

Customer-spec. information
Customer : SCANIA
Motor : DSC 9.15

TEST BENCH REQUIREMENTS

Inlet Line : EHAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.20

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery blocking

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.70

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 300.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 9.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 250

Rack travel in mm : 7.50
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1055
guide sleeve
travel mm : 4.82
Tolerance mm : \pm 0.15

Rated speed rpm : 250
guide sleeve
travel mm : 1.48
Tolerance mm : \pm 0.20

Rated speed rpm : 970
guide sleeve
travel mm : 4.50
Tolerance mm : \pm 0.10

Rated speed rpm : 358

guide sleeve
travel mm : 3.50
Tolerance mm : \pm 0.10

Rated speed rpm : 490
guide sleeve
travel mm : 4.50
Tolerance mm : \pm 0.10

Rated speed rpm : 1129
guide sleeve
travel mm : 5.50
Tolerance mm : \pm 0.10

Rated speed rpm : 1600
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : 108
Rated speed rpm : 600

Rack travel in mm : 16.00
Tolerance mm : \pm 1.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 300.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 9.0

Speed

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 47.0
tolerance degree : \pm 4.0

control lever
position degree : 109.0
tolerance degree : \pm 4.0

RATED SPEED
 rack travel mm : 11.70
 Rated speed rpm : 1045
 Tolerance 1/min : + 5
 Check
 speed 1/min : + 10
 rack travel mm : 4.00
 Rated speed rpm : 1220
 Tolerance 1/min : + 15
 Check
 speed 1/min : + 20
 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1350

LOW IDLE

control lever
 position degree : 87.0
 tolerance degree : + 4.0

control lever
 position degree : 25.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 250
 rack travel mm : 7.50
 Tolerance mm : + 0.10

rack travel mm : 2.00
 Rated speed rpm : 350
 Tolerance 1/min : + 20

Rated speed rpm : 150

CRT mm min. : > 9.00

TORQUE CONTROL

Rated speed rpm : 600
 rack travel mm : 12.70
 Tolerance mm : + 0.05

Rated speed rpm : 1000
 rack travel mm : 12.70
 Tolerance mm : + 0.05

ANEROID/ALTITUDE
 COMPENSATOR TEST

SETTING

Rated speed rpm : 500
 Pressure hPa : 1500
 rack travel mm : 12.70
 Tolerance mm : + 0.05

Pressure hPa : -
 Rated speed rpm : 500
 rack travel mm : 9.90
 Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 330
 rack travel mm : 10.65
 Tolerance mm : + 0.15

Pressure hPa : 710
 rack travel mm : 11.95
 Tolerance mm : + 0.05

Start interlock

Rated speed rpm : < 170
 Rated speed rpm : > 100

Check
 speed 1/min : < 190
 Check
 speed 1/min : > 80

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 1500
 Rated speed rpm : 1000
 Del. quantity
 cm³/1000 strokes : 290.0
 Tolerance
 cm³/1000 strokes : + 4.0
 Check tolerance
 cm³/1000S. : + 9.0

Aneroid pressure
 hPa : -
 Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 172.0
 Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : +- 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : +- 0.50
Del. quantity
cm³/1000 strokes : 270.0
Tolerance
cm³/1000 strokes : +- 20.0
Check tolerance
cm³/1000S. : +- 24.0

LOW IDLE

Rated speed rpm : 250
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.03.97
Test oil : ISO 4113
Combination No. : 0 402 946 025
Injection pump
Pump designation : PES6P120A320RS8038
EP type number : 0 412 926 025
Governor
Governor design. : RQV250...1000PA1239
: 3
Governor no. : 0 421 814 178
Cust. part No. : 1383494

Customer-spec. information
Customer : SCANIA
Motor : DSC 915

TEST BENCH REQUIREMENTS

Inlet line : EHAB
Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 2 417 413 082
Inlet press. bar : 2.5
Tolerance bar : + 0.1
Overflow quantity
min. L/h : 100
Tolerance L/h : + 20.0
Test nozzle holder
assembly : 1 688 901 104
Opening pressure
bar : 251.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 008
Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0
Prestroke mm : 4.00
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10
Rack travel in mm : 20.50
Tolerance mm : + 0.20
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
Tolerance : + 0.30
Check
tolerance °NW : + 0.50
Start of delivery blocking
Tolerance : + 0.50
Check
tolerance °NW : + 0.75
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600
Rack travel in mm : 12.70
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 300.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 8.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 250

Rack travel in mm : 7.50

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 40.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1057
guide sleeve
travel mm : 7.89
Tolerance mm : ± 0.15

Rated speed rpm : 250
guide sleeve
travel mm : 1.33
Tolerance mm : ± 0.20

Rated speed rpm : 748
guide sleeve
travel mm : 6.17
Tolerance mm : ± 0.25

Rated speed rpm : 470

guide sleeve
travel mm : 4.09
Tolerance mm : ± 0.25

Rated speed rpm : 1470
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1265

Rack travel in mm : 11.40
Tolerance mm : ± 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 300.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 8.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 57.0
tolerance degree : ± 4.0

control lever
position degree : 120.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.70
Rated speed rpm : 1045
Tolerance 1/min : ± 5
Check
speed 1/min : ± 10

rack travel mm : 4.00
Rated speed rpm : 1235
Tolerance 1/min : ± 15

Check
speed 1/min : + 20

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 87.0
tolerance degree : + 4.0

control lever
position degree : 25.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 7.50
Tolerance mm : + 0.10

Rated speed rpm : 150

CRT mm min. : > 9.80

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 12.70
Tolerance mm : + 0.05

Rated speed rpm : 1000
rack travel mm : 12.70
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.70
Tolerance mm : + 0.05

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.90
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 330
rack travel mm : 10.85
Tolerance mm : + 0.15

Pressure hPa : 710
rack travel mm : 11.95
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : < 170
Rated speed rpm : > 100

Check
speed 1/min : < 190
Check
speed 1/min : > 80

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 290.0
Tolerance
cm³/1000 strokes : + 4.0
Check tolerance
cm³/1000S. : + 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 172.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + 0.50
Del. quantity
cm³/1000 strokes : 265.0
Tolerance
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000S. : + 24.0

LOW IDLE

Rated speed rpm : 250
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.03.97
 Test oil : ISO 4113
 Combination No. : 0 403 444 151
 Injection pump
 Pump designation : PES4MW100/720RS1235
 EP type number : 0 413 404 121
 Governor
 Governor design. : RQV300...1300MW139
 Governor no. : 0 420 083 304
 Cust. part No. : 0250742602

Customer-spec. information
 Customer : MB-NFZ
 Motor : OM364A
 Power KW : 79.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
 Test oil inlet temp. °C : 40
 Tolerance °C : +- 2.0
 Overflow valve : 1 419 992 198
 Inlet press. bar : 1.5
 Test nozzle holder assembly : 1 688 901 101
 Opening pressure bar : 208.5
 Tolerance bar : +- 1.5
 Test lines : 1 680 750 089
 Outside diameter : 8.0

x inside diameter : 3.0
 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
 Tolerance bar : +- 1.0
 Prestroke mm : 3.70
 Tolerance mm : +- 0.05
 Check tolerance mm : +- 0.10
 Rack travel in mm : 20.00
 Tolerance mm : +- 1.00
 Firing order : 1- 3- 4- 2
 Phasing : 0-90-180-270
 Tolerance : +- 0.50
 Check tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1300
 Rack travel in mm : 12.90
 Tolerance mm : +- 0.05
 Del. quantity cm³/1000 strokes : 88.0
 Tolerance cm³/1000 strokes : +- 1.0
 Check tolerance cm³/1000S. : +- 3.0
 Spreed
 Tolerance cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 300

Rack travel in mm : 8.15
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1354
guide sleeve
travel mm : 10.31
Tolerance mm : ± 0.25

Rated speed rpm : 300
guide sleeve
travel mm : 1.27
Tolerance mm : ± 0.25

Rated speed rpm : 894
guide sleeve
travel mm : 6.18
Tolerance mm : ± 0.25

Rated speed rpm : 390
guide sleeve
travel mm : 2.39
Tolerance mm : ± 0.25

Rated speed rpm : 440
guide sleeve
travel mm : 3.01
Tolerance mm : ± 0.25

Rated speed rpm : 510
guide sleeve
travel mm : 3.56
Tolerance mm : ± 0.25

Rated speed rpm : 1600

guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1430

Rack travel in mm : 10.00
Tolerance mm : ± 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 700

Del. quantity
cm³/1000 strokes : 88.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 11.90
Rated speed rpm : 1345
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1455
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 76.0
tolerance degree : +- 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 8.15
Tolerance mm : +- 0.10

Rated speed rpm : 200
CRT mm min. : > 9.50

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 12.90
Tolerance mm : +- 0.05

Rated speed rpm : 600
rack travel mm : 13.40
Tolerance mm : +- 0.10

Rated speed rpm : 1150
rack travel mm : 13.20
Tolerance mm : +- 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 13.40
Tolerance mm : +- 0.10

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : +- 0.05

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 230
rack travel mm : 0.90
Tolerance mm : +- 0.10

Pressure hPa : 150
rack travel mm : 0.40
Tolerance mm : +- 0.10

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 200

Check
speed 1/min : > 80
Check
speed 1/min : < 230

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 78.0
Tolerance
cm³/1000 strokes : +- 1.5
Check tolerance
cm³/1000S. : +- 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 48.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 90.0
Tolerance
cm³/1000 strokes : +- 5.0
Check tolerance
cm³/1000S. : +- 8.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.5

Spreed

Tolerance

cm³/1000 strokes : 3.5

Check tolerance

cm³/1000S. : 5.5

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.03.97
Test oil : ISO 4113

Combination No. : 0 403 476 149

Injection pump
Pump designation : PES6MW100/72ORS1131
EP type number : 0 413 406 123

Governor
Governor design. : RSV350...900MWDA406
Governor no. : 0 420 085 295

Cust. part No. : 0270741502

Customer-spec. information
Customer : MB-NFZ
Motor : OM 366 A
Power KW : 101.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde assembly : 1 688 901 101

Opening pressure bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.75
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.50
Check tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 880

Rack travel in mm : 11.60
Tolerance mm : ± 0.05

Del. quantity cm³/1000 strokes : 89.0

Tolerance cm³/1000 strokes : ± 1.0

Check tolerance cm³/1000S. : ± 3.0

Spread

Tolerance
 cm³/1000 strokes : 3.5

Check tolerance
 cm³/1000S. : 6.0

Rated speed rpm : 350

Rack travel in mm : 6.10
 Tolerance mm : + 0.25

Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5

Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800

Rack travel in mm : 0.65
 Tolerance mm : + 0.35

governor spring
 pre-tension
 click setting x : 4.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 380
 Aneroid pressure
 hPa : 800

Del. quantity
 cm³/1000 strokes : 89.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 3.0

Spreed
 Tolerance
 cm³/1000 strokes : 3.5

Check tolerance
 cm³/1000S. : 6.0

CONTROL LEVER

control lever
 position degree : 92.0
 tolerance degree : + 4.0

RATED SPEED
 rack travel mm : 10.60
 Rated speed rpm : 933
 Tolerance 1/min : + 3

rack travel mm : 4.00
 Rated speed rpm : 1000
 Tolerance 1/min : + 5

rack travel mm : 1.00
 Tolerance mm : + 0.70
 Rated speed rpm : 1100

LOW IDLE

control lever
 position degree : 73.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
 rack travel mm : 6.10
 Tolerance mm : + 0.25

rack travel mm : 2.00
 Rated speed rpm : 410
 Tolerance 1/min : + 30

Rated speed rpm : 100
 CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 880
 rack travel mm : 11.60
 Tolerance mm : + 0.05

ANEROID/ALTITUDE
 COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 800
rack travel mm : 11.60
Tolerance mm : \pm 0.10

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 375
rack travel mm : 1.10
Tolerance mm : \pm 0.10

Pressure hPa : 275
rack travel mm : 0.60
Tolerance mm : \pm 0.10

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 53.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.03.97
Test oil : ISO 4113
Combination No. : 0 400 074 903
Injection pump
Pump designation : PES4M55C320RS169
EP type number : 0 410 054 959
Governor
Governor design. : RSF360/2300M60-9
Governor no. : 0 420 021 109

Cust. part No. :

Customer-spec. information
Customer : MB-PKW
Motor : OM601-ECE
Power KW : 53.0

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 469 990 351
Inlet press. bar : 1.0
Test nozzle holder assembly : 1 688 901 111
Opening pressure bar : 148.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant. per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Start of delivery blocking

*NW after s.o.d. : 19.50
Tolerance : ± 0.20
Check tolerance *NW : ± 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.35
Tolerance mm : ± 0.05

Del. quantity cm³/1000 strokes : 33.5

Tolerance cm³/1000 strokes : ± 0.5

Check tolerance cm³/1000S. : ± 1.5

Speed Tolerance cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0
Rated speed rpm : 335
Rack travel in mm : 6.40
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 6.5
Tolerance
cm³/1000 strokes : ± 0.5
Spread
Tolerance
cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

—————
IDLE STAGE

Rack travel in mm : 6.50
Tolerance mm : ± 0.10

—————
FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 1100
Del. quantity
cm³/1000 strokes : 33.5
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 1.5
Spread
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

—————
RATED SPEED

control lever
position degree : 50.0
Rated speed rpm : 2500
rack travel mm : 8.70
Tolerance mm : ± 0.20
Rated speed rpm : 2950
rack travel mm : 0.50
Tolerance mm : ± 0.50

—————
SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000
CRT mm max. : < 1.25

—————
LOW IDLE

control lever
position degree : 14.0
tolerance degree : ± 2.0

Setting point w/out bumper spring
Rated speed rpm : 335
rack travel mm : 6.40

—————
SET IDLE AUXILIARY SPRING

Rated speed rpm : 400
rack travel mm : 5.00
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 660
Tolerance 1/min : ± 50

Load pick-up

Rated speed rpm : 225
rack travel mm : > 9.00

Rated speed rpm : 1000

CRT mm max. : < 1.25

rack travel mm : 6.40
Rated speed rpm : 335

—————
TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 12.35
Tolerance mm : ± 0.05

Rated speed rpm : 1800
rack travel mm : 11.80
Tolerance mm : ± 0.10

Rated speed rpm : 2200
rack travel mm : 11.50
Tolerance mm : ± 0.10

—————
ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 950
rack travel mm : -0.10
Tolerance mm : +- 0.10

MEASUREMENT

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 900
rack travel mm : -0.60
Tolerance mm : +- 0.10

Ref. pressure
ALDA / ADA hPa : 750
rack travel mm : -2.00
Tolerance mm : +- 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 1800
Del. quantity
cm3/1000 strokes : 33.8
Tolerance
cm3/1000 strokes : +- 0.8
Check tolerance
cm3/1000S. : +- 1.8
Spreed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 2200
Spreed
Del. quantity
cm3/1000 strokes : 35.0
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000S. : +- 2.0
Spreed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

HIGH IDLE

K01

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 2500
rack travel mm : 8.70
Tolerance mm : +- 0.20
Del. quantity
cm3/1000 strokes : 24.0
Tolerance
cm3/1000 strokes : +- 2.0
Check tolerance
cm3/1000S. : +- 3.0
Spreed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.50
Tolerance mm : +- 1.50
Del. quantity
cm3/1000 strokes : 52.0
Spreed
Tolerance
cm3/1000 strokes : 6.0

LOW IDLE

Rated speed rpm : 335
Del. quantity
cm3/1000 strokes : 7.8
Check tolerance
cm3/1000S. : +- 2.3
Spreed
Check tolerance
cm3/1000S. : 1.5

control lever
position degree : > 49.00

control lever
position degree : < 46.50

SETTING PNEUMATIC FAST IDLE (PLA)
(PLA) POSITION

control lever
position degree : 14.0
tolerance degree : ± 2.0

SETTING/TESTING ELECTRONIC IDLE
REGULATION (ELR)

Rated speed rpm : 360
Rack travel in mm : 13.00
Tolerance mm : ± 0.70
Del. quantity
cm³/1000 strokes : 34.0
Tolerance
cm³/1000 strokes : ± 3.5
Current A : 1.80
Rated speed rpm : 2950
Rack travel in mm : 0.50
Tolerance mm : ± 0.50

Current short-
duration A : 3.00

Starting test

Rated speed rpm : 100
Current A : 1.80

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 335
Vacuum hPa : -450.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.03.97
Test oil : ISO 4113

Combination No. : 0 401 876 211

Injection pump
Pump designation : PE6P110A320RS350
EP type number : 0 411 816 109

Governor
Governor design. : RSV300...1100P1/816D
: R
Governor no. : 0 421 835 083

Cust. part No. :

Customer-spec. information
Customer : RENAULT V.I.
Motor : MDS 063540
Power kW : 205.9

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 1.5

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 1.35
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 3

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 167.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
 cm³/1000S. : + 3.5

Spread

Tolerance
 cm³/1000 strokes : 4.0

Check tolerance
 cm³/1000S. : 7.5

Rated speed rpm : 300

Rack travel in mm : 6.40
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 13.0
 Tolerance
 cm³/1000 strokes : + 4.0
 Check tolerance
 cm³/1000S. : + 6.5
 Spread
 Tolerance
 cm³/1000 strokes : 4.5
 Check tolerance
 cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800

Rack travel in mm : 0.65
 Tolerance mm : + 0.35

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
 Aneroid pressure
 hPa : 700
 Del. quantity
 cm³/1000 strokes : 167.5
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 3.5
 Spread
 Tolerance
 cm³/1000 strokes : 4.0

Check tolerance
 cm³/1000S. : 7.5

CONTROL LEVER

control lever
 position degree : 64.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.70
 Rated speed rpm : 1145
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1215
 Tolerance 1/min : + 15

rack travel mm : 1.00
 Tolerance mm : + 0.70
 Rated speed rpm : 1300

LOW IDLE

control lever
 position degree : 30.0
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 300
 rack travel mm : 6.90
 Tolerance mm : + 0.10

Testing:

Rated speed rpm : 300
 rack travel mm : 6.40
 Tolerance mm : + 0.10

rack travel mm : 2.00
 Rated speed rpm : 530
 Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 1100
 rack travel mm : 12.75
 Tolerance mm : + 0.05

Rated speed rpm : 1000
 rack travel mm : 13.00
 Tolerance mm : + 0.10

Rated speed rpm : 700
rack travel mm : 13.60
Tolerance mm : +- 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 13.60
Tolerance mm : +- 0.10

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.75
Tolerance mm : +- 0.05

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 220
rack travel mm : 11.55
Tolerance mm : +- 0.15

Pressure hPa : 380
rack travel mm : 12.85
Tolerance mm : +- 0.05

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 182.5
Tolerance
cm³/1000 strokes : +- 2.5
Check tolerance
cm³/1000S. : +- 5.5

Aneroid pressure
hPa : -
Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 111.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : +- 0.75
Del. quantity
cm³/1000 strokes : 170.0
Tolerance
cm³/1000 strokes : +- 10.0
Check tolerance
cm³/1000S. : +- 14.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : +- 4.0
Check tolerance
cm³/1000S. : +- 6.5
Spread
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.03.97
Test oil : ISO 4113

Combination No. : 0 402 646 626

Injection pump
Pump designation : PE6P120A320RS7299
EP type number : 0 412 626 885

Governor
Governor design. : RQV275...1000PA1076K
Governor no. : 0 421 815 357

Cust. part No. : 1280160

Customer-spec. information
Customer : DAF
Motor : WS 268 M
Power KW : 268.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 160
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check
tolerance *NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 13.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 250.0

Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
 cm³/1000S. : + 4.0

Spread

Tolerance
 cm³/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 4.80
 Tolerance mm : + 0.10

Del. quantity
 cm³/1000 strokes : 17.0

Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 6.0

Spread
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1045
 guide sleeve
 travel mm : 9.82
 Tolerance mm : + 0.20

Rated speed rpm : 275
 guide sleeve
 travel mm : 2.14
 Tolerance mm : + 0.15

Rated speed rpm : 689
 guide sleeve
 travel mm : 6.43
 Tolerance mm : + 0.25

Rated speed rpm : 284
 guide sleeve
 travel mm : 2.27
 Tolerance mm : + 0.25

Rated speed rpm : 334

guide sleeve
 travel mm : 3.17
 Tolerance mm : + 0.25

Rated speed rpm : 390
 guide sleeve
 travel mm : 3.79
 Tolerance mm : + 0.25

Rated speed rpm : 1310
 guide sleeve
 travel mm : 13.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1130

Rack travel in mm : 12.60
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 250.0

Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0

Spread
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 120.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.55
 Rated speed rpm : 1042
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1160
 Tolerance 1/min : + 15

rack travel mm : 0.70
Tolerance mm : ± 0.70
Rated speed rpm : 1275

LOW IDLE

control lever
position degree : 74.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 4.80
Tolerance mm : ± 0.10

Rated speed rpm : 175

CRT mm min. : > 7.50

Rated speed rpm : 275

TORQUE CONTROL

Rated speed rpm : 980
rack travel mm : 13.55
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 13.05
Tolerance mm : ± 0.05

Rated speed rpm : 600
rack travel mm : 12.10
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 11.70
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 980
Pressure hPa : 1500
rack travel mm : 13.55
Tolerance mm : ± 0.05

Pressure hPa : -
Rated speed rpm : 980
rack travel mm : 8.60

K08

Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 980

Pressure hPa : 720
rack travel mm : 12.25
Tolerance mm : ± 0.05

Pressure hPa : 360
rack travel mm : 9.80
Tolerance mm : ± 0.10

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 263.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 154.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

LOW IDLE

Rated speed rpm : 275
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.03.97
Test oil : ISO 4113

Combination No. : 0 402 648 701

Injection pump
Pump designation : PE8P120A320LS7906
EP type number : 0 412 628 921

Governor
Governor design. : RQ300/1050PA1341
Governor no. : 0 421 801 819

Cust. part No. : 04222 3944 KY

Customer-spec. information

Customer : KHD
Motor : BF8M1015/C
Power KW : 400.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 033

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 220
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 8- 7- 2- 6- 5
 : - 3- 1

Phasing : 0-45-90-135-180
 : -270-315
Tolerance : ± 0.30
Check
tolerance *NW : ± 0.50

Start of delivery blocking

*NW after s.o.d. : 315.00
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 14.00
 Tolerance mm : + 0.05

Del. quantity
 cm³/1000 strokes : 350.0

Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
 cm³/1000S. : + 4.0

Spread

Tolerance
 cm³/1000 strokes : 6.0

Check tolerance
 cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.00
 Tolerance mm : + 0.10

Del. quantity
 cm³/1000 strokes : 23.0

Tolerance
 cm³/1000 strokes : + 3.0

Check tolerance
 cm³/1000S. : + 6.0

Spread

Tolerance
 cm³/1000 strokes : 8.0

Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1108
 guide sleeve
 travel mm : 6.53
 Tolerance mm : + 0.15

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.60
 Tolerance mm : + 0.20

Rated speed rpm : 1050
 guide sleeve
 travel mm : 6.00
 Tolerance mm : + 0.10

Rated speed rpm : 434
 guide sleeve
 travel mm : 3.65
 Tolerance mm : + 0.10

Rated speed rpm : 590
 guide sleeve
 travel mm : 6.00
 Tolerance mm : + 0.10

Rated speed rpm : 1290
 guide sleeve
 travel mm : 11.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
 position degree : 90
 Rated speed rpm : 700

Rack travel in mm : 12.20
 Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
 Arteroid pressure
 hPa : 1700

Del. quantity
 cm³/1000 strokes : 350.0

Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
 cm³/1000S. : + 4.0

Spread

Tolerance
 cm³/1000 strokes : 6.0

Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 101.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 13.00
 Rated speed rpm : 1100
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1200

Tolerance 1/min : + 15
rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 72.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.00
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 420
Tolerance 1/min : + 20

Rated speed rpm : 200
CRT mm min. : > 6.50

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 14.00
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1700
rack travel mm : 14.00
Tolerance mm : + 0.05

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 8.75
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 400
Pressure hPa : 570
rack travel mm : 10.50

Tolerance mm : + 0.20
Pressure hPa : 1100
rack travel mm : 13.00
Tolerance mm : + 0.05

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 240.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 8.75
Tolerance mm : + 0.30
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000S. : + 24.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.03.97
Test oil : ISO 4113

Combination No. : 0 402 648 945

Injection pump
Pump designation : PE8P120A320LS7847-3
EP type number : 0 412 628 886

Governor
Governor design. : RQ300/1050PA1030-16
Governor no. : 0 421 801 738

Cust. part No. : 0230747802

Customer-spec. information
Customer : MB-NFZ
Motor : OM402 LA
Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance L/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

K13

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
 : - 4- 1

Phasing : 0-45-90-135-180
 : -270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.40

Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 226.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.50
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Speed

Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1104
guide sleeve
travel mm : 6.65
Tolerance mm : + 0.10

Rated speed rpm : 300
guide sleeve
travel mm : 1.79
Tolerance mm : + 0.10

Rated speed rpm : 1050
guide sleeve
travel mm : 6.30
Tolerance mm : + 0.10

Rated speed rpm : 792

guide sleeve
travel mm : 6.08
Tolerance mm : + 0.10

Rated speed rpm : 414
guide sleeve
travel mm : 3.88
Tolerance mm : + 0.10

Rated speed rpm : 550
guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 1270
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

Rated speed rpm : 847
guide sleeve
travel mm : 6.23
Tolerance mm : + 0.10

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 226.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

Speed

Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 99.0
tolerance degree : + 4.0

RATED SPEED
 rack travel mm : 13.00
 Rated speed rpm : 1098
 Tolerance 1/min : + 8

 rack travel mm : 4.00
 Rated speed rpm : 1190
 Tolerance 1/min : + 15

 rack travel mm : 0.70
 Tolerance mm : + 0.70
 Rated speed rpm : 1300

LOW IDLE

control lever
 position degree : 72.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 5.50
 Tolerance mm : + 0.10

 rack travel mm : 2.00
 Rated speed rpm : 405
 Tolerance 1/min : + 20

 Rated speed rpm : 200

 CRT mm. min. : > 7.10

TORQUE CONTROL

Rated speed rpm : 550
 rack travel mm : 14.40
 Tolerance mm : + 0.05

 Rated speed rpm : 1050
 rack travel mm : 14.05
 Tolerance mm : + 0.10

 Rated speed rpm : 950
 rack travel mm : 14.20
 Tolerance mm : + 0.10

 Rated speed rpm : 800
 rack travel mm : 14.40
 Tolerance mm : + 0.05

 Rated speed rpm : 400
 rack travel mm : 12.90
 Tolerance mm : + 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 400
 Pressure hPa : 1200
 rack travel mm : 14.40
 Tolerance mm : + 0.05

 Pressure hPa : -
 Rated speed rpm : 400
 rack travel mm : 10.40
 Tolerance mm : + 0.15

MEASUREMENT

Rated speed rpm : 400

 Pressure hPa : 450
 rack travel mm : 12.90
 Tolerance mm : + 0.20

 Pressure hPa : 300
 rack travel mm : 11.90
 Tolerance mm : + 0.20

Start interlock

Rated speed rpm : > 100
 Rated speed rpm : > 220

 Check
 speed 1/min : > 80
 Check
 speed 1/min : > 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 1200
 Rated speed rpm : 1050
 Del. quantity
 cm³/1000 strokes : 212.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 5.0
 Spreed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

 Aneroid pressure
 hPa : 450

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 166.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.5

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 107.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 200.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.03.97
Test oil : ISO 4113

Combination No. : 0 402 670 810

Injection pump
Pump designation : PE12P120A520/5RS7375
EP type number : 0 412 620 844

Governor
Governor design. : RSUV300...900POA361
Governor no. : 0 421 829 110

Cust. part No. : 1 2277 426

Customer-spec. information

Customer : MWM
Motor : TBD 616-V12
Power KW : 648.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2/3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 120
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 13.00
Tolerance mm : ± 0.50

Firing order : 1- 2- 9-10- 5- 6
: 11- 12- 3- 4- 7
: 8

Phasing : 0-30-60-90-120-150
: 180-210-240-270-300
: 330

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.30
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 325.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325

Rack travel in mm : 4.90
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 30.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 3.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 325.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 105.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 1.00
Tolerance mm : ± 0.70
Rated speed rpm : 950

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
rack travel mm : 12.30

Rated speed rpm : 784
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 1.00
Tolerance mm : ± 0.70

Rated speed rpm : 751
rack travel mm : 12.30

Rated speed rpm : 785
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 1.00
Tolerance mm : ± 0.70

Rated speed rpm : 752
rack travel mm : 12.30

Rated speed rpm : 786
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 1.00
Tolerance mm : + 0.70

Rated speed rpm : 753
rack travel mm : 12.30

Rated speed rpm : 787
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 1.00
Tolerance mm : + 0.70

Rated speed rpm : 754
rack travel mm : 12.30

Rated speed rpm : 788
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 1.00
Tolerance mm : + 0.70

Rated speed rpm : 755
rack travel mm : 12.30

Rated speed rpm : 789
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 1.00
Tolerance mm : + 0.70

LOW IDLE

control lever
position degree : 78.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.40
Tolerance mm : + 0.10

Testing:

Rated speed rpm : 325
rack travel mm : 4.90
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 360
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.30
Tolerance mm : + 0.05

Start interlock

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 350.0
Tolerance
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000S. : + 24.0

LOW IDLE

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BO3CH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.03.97
Test oil : ISO 4113

Combination No. : 0 402 746 986

Injection pump
Pump designation : PES6P120A72ORS7224
EP type number : 0 412 726 893

Governor
Governor design. : RQ275/1050PA1021-3
Governor no. : 0 421 801 677

Cust. part No. :

Customer-spec. information
Customer : IVECO-UNIC
Motor : 8460.41.731

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 140
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.15
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Check
tolerance °NW : ± 0.40

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.65
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 221.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 5.00
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 221.0

Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED
rack travel mm : 11.60
Rated speed rpm : 1103
Tolerance 1/min : + 8

rack travel mm : 4.00
Rated speed rpm : 1175
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 5.00
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 355
Tolerance 1/min : + 20

Rated speed rpm : 100

CRT mm min. : > 6.50

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 12.65
Tolerance mm : + 0.05

Rated speed rpm : 600
rack travel mm : 12.70
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 12.65
Tolerance mm : \pm 0.05

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 7.70
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 290
rack travel mm : 8.90
Tolerance mm : \pm 0.20

Pressure hPa : 580
rack travel mm : 11.35
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 195

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 261.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000s. : \pm 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000s. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000s. : \pm 19.0

LOW IDLE

Rated speed rpm : 275
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.03.97
Test oil : ISO 4113

Combination No. : 0 402 746 992

Injection pump
Pump designation : PES6P120A720RS7340
EP type number : 0 412 726 912

Governor
Governor design. : RQ300...1100PA1156
Governor no. : 0 421 801 726

Cust. part No. :

Customer-spec. information
Customer : RABA
Motor : TLL235
Power KW : 235.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.50
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 15.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 300

Rack travel in mm : 5.90
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 22.0

Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1159
guide sleeve
travel mm : 6.37
Tolerance mm : + 0.10

Rated speed rpm : 300
guide sleeve
travel mm : 2.30
Tolerance mm : + 0.10

Rated speed rpm : 1100
guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 384
guide sleeve
travel mm : 4.57
Tolerance mm : + 0.10

Rated speed rpm : 470
guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 1360
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 500

Rack travel in mm : 20.00
Tolerance mm : + 0.80

CONTROL LEVER

control lever
position degree : 35.0
tolerance degree : + 4.0

control lever
position degree : 96.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.50
Rated speed rpm : 1152
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1260
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 75.0
tolerance degree : + 4.0

control lever
position degree : 13.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.90
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 385
Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > 8.60

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 13.50
Tolerance mm : + 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 13.50
Tolerance mm : ± 0.05

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 11.05
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 210
rack travel mm : 11.70
Tolerance mm : ± 0.20

Pressure hPa : 400
rack travel mm : 12.90
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : < 100
Rated speed rpm : > 220

Check
speed 1/min : < 80
Check
speed 1/min : > 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 201.5
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 128.0
Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 205.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.03.97
 Test oil : ISO 4113
 Combination No. : 0 403 466 179
 Injection pump
 Pump designation : PES6MW100/720/3RS120
 : 5-1
 EP type number : 0 413 406 245
 Governor
 Governor design. : RSV675...125CMW0A403
 Governor no. : 0 420 085 296
 Cust. part No. : 0280742102

Customer-spec. information

Customer : MB-NFZ
 Motor : OM 366 LA
 Power kW : 174.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
 Test oil inlet
 temp. °C : 40
 Tolerance °C : ± 2.0
 Overflow valve : 1 419 992 198
 Inlet press. bar : 1.5
 Test nozzle holde
 assembly : 1 688 901 101
 Opening pressure
 bar : 208.5
 Tolerance bar : ± 1.5
 Test lines : 1 680 750 089
 Outside diameter : 8.0

x inside diameter : 3.0
 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
 Tolerance bar : ± 1.0
 Prestroke mm : 3.25
 Tolerance mm : ± 0.05
 Check
 tolerance mm : ± 0.10
 Rack travel in mm : 10.50
 Tolerance mm : ± 1.50
 Firing order : 1- 5- 3- 6- 2-
 : 4
 Phasing : 0-60-120-180-240
 Tolerance : ± 0.50
 Check
 tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1230
 Rack travel in mm : 13.70
 Tolerance mm : ± 0.05
 Del. quantity
 cm³/1000 strokes : 106.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000s. : ± 3.0
 Spreed

Tolerance
 cm³/1000 strokes : 3.5

Check tolerance
 cm³/1000S. : 6.0

Rated speed rpm : 675

Rack travel in mm : 5.50
 Tolerance mm : + 0.30

Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5

Spread
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 5.5

(8) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800

Rack travel in mm : 0.65
 Tolerance mm : + 0.35

governor spring
 pre-tension
 click setting x : 1.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1230
 Aneroid pressure
 hPa : -

Del. quantity
 cm³/1000 strokes : 106.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 3.0

Spread
 Tolerance
 cm³/1000 strokes : 3.5

Check tolerance
 cm³/1000S. : 6.0

CONTROL LEVER

control lever
 position degree : 92.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 1.00
 Tolerance mm : + 0.70
 Rated speed rpm : 1400

rack travel mm : 4.00
 Rated speed rpm : 1305

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1270
 rack travel mm : 12.70

Rated speed rpm : 1299
 Tolerance 1/min : + 4
 rack travel mm : 4.00

Rated speed rpm : 1271
 rack travel mm : 12.70

Rated speed rpm : 1300
 Tolerance 1/min : + 4
 rack travel mm : 4.00

Rated speed rpm : 1272
 rack travel mm : 12.70

Rated speed rpm : 1301
 Tolerance 1/min : + 4
 rack travel mm : 4.00

Rated speed rpm : 1273
 rack travel mm : 12.70

Rated speed rpm : 1302
 Tolerance 1/min : + 4
 rack travel mm : 4.00

Rated speed rpm : 1278
 rack travel mm : 12.70

Rated speed rpm : 1307
 Tolerance 1/min : + 4
 rack travel mm : 4.00

Rated speed rpm : 1279
rack travel mm : 12.70

Rated speed rpm : 1308
Tolerance 1/min : + 4
rack travel mm : 4.00

LOW IDLE

control lever
position degree : 73.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 675
rack travel mm : 5.50
Tolerance mm : + 0.30

rack travel mm : 2.00
Rated speed rpm : 690
Tolerance 1/min : + 30

Rated speed rpm : 100
CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1230
rack travel mm : 13.70
Tolerance mm : + 0.05

Rated speed rpm : 800
rack travel mm : 13.70
Tolerance mm : + 0.10

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 104.0
Tolerance
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000S. : + 4.0
Spreed

Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 115.0
Tolerance
cm³/1000 strokes : + 5.0
Check tolerance
cm³/1000S. : + 8.0

LOW IDLE

Rated speed rpm : 675
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.06.96
Test oil : ISO 4113

Combination No. : 0 402 046 867

Injection pump
Fuel designation : PES6P120A72ORS3345
EP type number : 0 412 026 779

Governor
Governor design. : RQ300/1025PAT214
Governor no. : 0 421 801 784

Cust. part No. :

Customer-spec. information
Customer : IVECO-FIAT
Motor : 8360.46.4669
Power Kw : 196.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 034

Inlet press. bar : 2.5

Overflow quantity
min. l/h : 175
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 2.5
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BASIC SETTING

Rated speed rpm : 1025

Rack travel in mm : 12.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 194.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
 cm³/1000S. : + 4.0

 Spread

 Tolerance
 cm³/1000 strokes : 5.0

 Check tolerance
 cm³/1000S. : 9.0

 Rated speed rpm : 300

 Rack travel in mm : 5.00
 Tolerance mm : +- 0.10
 Del. quantity
 cm³/1000 strokes : 22.0
 Tolerance
 cm³/1000 strokes : +- 3.0
 Check tolerance
 cm³/1000S. : +- 6.0
 Spread
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : 97
 Rated speed rpm : 550

 Rack travel in mm : 14.30
 Tolerance mm : +- 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1025
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm³/1000 strokes : 194.0
 Tolerance
 cm³/1000 strokes : +- 1.0
 Check tolerance
 cm³/1000S. : +- 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 5.0

L02

Check tolerance
 cm³/1000S. : 9.0

 RATED SPEED
 rack travel mm : 11.85
 Rated speed rpm : 1085
 Tolerance 1/min : +- 8
 Check
 speed 1/min : +- 13

 rack travel mm : 4.00
 Rated speed rpm : 1160
 Tolerance 1/min : +- 15
 Check
 speed 1/min : +- 20

 rack travel mm : 0.50
 Tolerance mm : +- 0.50
 Rated speed rpm : 1250

 rack travel mm : 4.00

LOW IDLE

control lever
 position degree : 74.0
 tolerance degree : +- 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 5.00
 Tolerance mm : +- 0.10

 rack travel mm : 2.00
 Rated speed rpm : 360
 Tolerance 1/min : +- 20

 Rated speed rpm : 200

 CRT mm min. : > 5.70

TORQUE CONTROL

Rated speed rpm : 1025
 rack travel mm : 12.85
 Tolerance mm : +- 0.05

 Rated speed rpm : 500
 rack travel mm : 12.90
 Tolerance mm : +- 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 12.85
Tolerance mm : ± 0.05

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.00
Tolerance m.a : ± 0.15

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 600
rack travel mm : 11.70
Tolerance mm : ± 0.20

Pressure hPa : 450
rack travel mm : 10.90
Tolerance mm : ± 0.05

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 198.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 86.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.00
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 90.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.04.97
Test oil : ISO 4113

Combination No. : 0 402 746 647

Injection pump
Pump designation : PES6P120A720RS7366
EP type number : 0 412 726 933

Governor
Governor design. : RQV275...1100PA1208K
Governor no. : 0 421 815 459

Cust. part No. :

Customer-spec. information
Customer : IVECO-FRANCE
Motor : 8460.41.4000

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 284.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 6.70
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1155
guide sleeve
travel mm : 9.75
Tolerance mm : ± 0.15

Rated speed rpm : 275
guide sleeve
travel mm : 1.70
Tolerance mm : ± 0.20

Rated speed rpm : 790
guide sleeve
travel mm : 6.42
Tolerance mm : ± 0.25

Rated speed rpm : 460
guide sleeve
travel mm : 3.77
Tolerance mm : ± 0.25

Rated speed rpm : 1440
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

L05

Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 284.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 117.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.70
Rated speed rpm : 1145
Tolerance 1/min : ± 5
Check
speed 1/min : ± 10

rack travel mm : 4.00
Rated speed rpm : 1260
Tolerance 1/min : ± 15
Check
speed 1/min : ± 20

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 76.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 6.70
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 8.20

Rated speed rpm : 335

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.75
Tolerance mm : ± 0.05

Rated speed rpm : 650
rack travel mm : 13.40
Tolerance mm : ± 0.10

Rated speed rpm : 800
rack travel mm : 13.50
Tolerance mm : ± 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 800
Pressure hPa : 1200
rack travel mm : 13.50
Tolerance mm : ± 0.10

Pressure hPa : -
Rated speed rpm : 800
rack travel mm : 9.40
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 800
Pressure hPa : 290
rack travel mm : 10.60
Tolerance mm : ± 0.20

Pressure hPa : 520
rack travel mm : 12.50
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : > 170
Rated speed rpm : < 220

Check speed 1/min : > 150
Check speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1200

Rated speed rpm : 650
Del. quantity cm³/1000 strokes : 287.0
Tolerance cm³/1000 strokes : ± 3.0
Check tolerance cm³/1000S. : ± 6.0

Aneroid pressure hPa : 1200
Rated speed rpm : 800
Del. quantity cm³/1000 strokes : 300.0
Tolerance cm³/1000 strokes : ± 3.0
Check tolerance cm³/1000S. : ± 6.0

Aneroid pressure hPa : -
Rated speed rpm : 650
Del. quantity cm³/1000 strokes : 151.0
Tolerance cm³/1000 strokes : ± 1.0
Check tolerance cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.00
Tolerance mm : ± 0.30
Del. quantity cm³/1000 strokes : 115.0
Tolerance cm³/1000 strokes : ± 15.0
Check tolerance cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 275
Del. quantity cm³/1000 strokes : 23.0
Tolerance cm³/1000 strokes : ± 3.0
Check tolerance cm³/1000S. : ± 6.0
Speed Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000S. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.03.97
Test oil : ISO 4113

Combination No. : 0 402 746 984

Injection pump
Pump designation : PES6P120A320RS7324
EP type number : 0 412 726 905

Governor
Governor design. : RQV300...1200PA1131
Governor no. : 0 421 814 088

Cust. part No. : 51.11103-7330

Customer-spec. information
Customer : MAN
Motor : D0826LF11/LFL03
Power KW : 162.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 175
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008
Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.15
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 12.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery blocking
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 12.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 190.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 300

Rack travel in mm : 5.40
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 29.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Spreed

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1263
guide sleeve
travel mm : 10.49
Tolerance mm : ± 0.25

Rated speed rpm : 300
guide sleeve
travel mm : 1.69
Tolerance mm : ± 0.25

Rated speed rpm : 806
guide sleeve
travel mm : 5.85
Tolerance mm : ± 0.25

Rated speed rpm : 347
guide sleeve
travel mm : 2.36

Tolerance mm : ± 0.25

Rated speed rpm : 397
guide sleeve
travel mm : 3.01
Tolerance mm : ± 0.25

Rated speed rpm : 440
guide sleeve
travel mm : 3.37
Tolerance mm : ± 0.25

Rated speed rpm : 1470
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1320

Rack travel in mm : 11.45
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

Spreed

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 123.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.45
Rated speed rpm : 1245
Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1340
Tolerance 1/min : + 15

rack travel mm : 0.25
Tolerance mm : + 0.25
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 83.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.40
Tolerance mm : + 0.10

Rated speed rpm : 250

CRT mm min. : > 6.50

Rated speed rpm : 360

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 12.45
Tolerance mm : + 0.05

Rated speed rpm : 1000
rack travel mm : 12.45
Tolerance mm : + 0.10

Rated speed rpm : 750
rack travel mm : 12.45
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.45
Tolerance mm : + 0.05

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 8.60
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 140
rack travel mm : 8.95
Tolerance mm : + 0.05

Pressure hPa : 700
rack travel mm : 11.85
Tolerance mm : + 0.15

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 240

Check
speed 1/min : > 80
Check
speed 1/min : < 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 189.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 199.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 129.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 189.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 29.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.04.97
Test oil : ISO 4113

Combination No. : 0 402 890 300

Injection pump
Pump designation : PE12P12QA52QLS8524
EP type number : 0 421 820 202

Governor
Governor design. : RE30
Governor no. : 0 421 890 036

Cust. part No. : 51.11103-7575

Customer-spec. information
Customer : MAN
Motor : D 2842 LF 03
Power KW : 559.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 3.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 6.40
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 13.00
Tolerance mm : ± 0.50

Firing order : 12- 1- 5- 9- 8
: - 4- 11- 10- 2
: - 7

Phasing : 0-45-60-105-120
: -180-225-240-285
: -345

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 12

(B) POSITIONER TESTING

Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : +/- 0.25
Check tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(ALL P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min-1: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check tolerance V : +/- 1.20

Engine speed min-1: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 1150
Uact V : 3.100
Del. quantity
cm³/1000 strokes : 310.0
Tolerance
cm³/1000 strokes : +/- 1.0
Check tolerance
cm³/1000S. : +/- 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 500
Uact V : 1.900
Del. quantity
cm³/1000 strokes : 177.0
Tolerance
cm³/1000 strokes : +/- 5.0
Check tolerance
cm³/1000S. : +/- 9.0

TEST POINT L1

Rated speed rpm : 300
Uact V : 1.340
Tolerance Volt : +/- 0.060
Check tolerance
Volt : +/- 0.080
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : +/- 3.0
Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.03.97
Test oil : ISO 4113

Combination No. : 0 402 946 026

Injection pump
Pump designation : PES6P120A720RS8045
EP type number : 0 412 926 028

Governor
Governor design. : RQV350...1100PA1305K
Governor no. : 0 421 815 967

Cust. part No. : 1388631

Customer-spec. information
Customer : SCANIA
Motor : DSI1174M

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 80
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery blocking
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.75

Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 250.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 7.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 4.10
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 30.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1165
guide sleeve
travel mm : 10.15
Tolerance mm : + 0.15

Rated speed rpm : 350
guide sleeve
travel mm : 2.00
Tolerance mm : + 0.20

Rated speed rpm : 755
guide sleeve
travel mm : 6.14
Tolerance mm : + 0.25

Rated speed rpm : 460

guide sleeve
travel mm : 4.07
Tolerance mm : + 0.25

Rated speed rpm : 1400
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1250

Rack travel in mm : 10.70
Tolerance mm : + 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 250.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 7.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 64.0
tolerance degree : + 4.0

control lever
position degree : 118.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.70
Rated speed rpm : 1145
Tolerance 1/min : + 5

Check
speed 1/min : + 10

rack travel mm : 4.00
Rated speed rpm : 1235
Tolerance 1/min : + 15

Check
speed 1/min : + 20

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 71.0
tolerance degree : + 4.0

control lever
position degree : 17.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 4.10
Tolerance mm : + 0.10

Rated speed rpm : 250

CRT mm min. : > 6.50

Rated speed rpm : 275

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.75
Tolerance mm : + 0.05

Rated speed rpm : 700
rack travel mm : 10.65
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 1500
rack travel mm : 11.75
Tolerance mm : + 0.05

Pressure hPa : -
Rated speed rpm : 1100
rack travel mm : 7.10
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 1100

Pressure hPa : 340
rack travel mm : 8.35
Tolerance mm : + 0.25

Pressure hPa : 800
rack travel mm : 10.65
Tolerance mm : + 0.05

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 263.0
Tolerance
cm³/1000 strokes : + 4.0
Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 163.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 7.10
Tolerance mm : + 0.50
Del. quantity
cm³/1000 strokes : 100.0
Tolerance
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000S. : + 24.0

LOW IDLE

Rated speed rpm : 350

Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.04.97
Test oil : ISO 4113
Combination No. : 0 400 876 434
Injection pump
Pump designation : PES6A95D410RS2864
EP type number : 0 410 896 888
Governor
Governor design. : RSV400...1050A8C2263
: -11L
Governor no. : 0 420 232 635
Cust. part No. : 87 800 972

Customer-spec. information
Customer : NH
Motor : P 396
Power KW : 176.0

TEST BENCH REQUIREMENTS

Inlet line : 1.3
Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : + 1.5
Test lines : 1 680 750 008
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : +- 1.0
Prestroke mm : 2.60
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10
Rack travel in mm : 10.50
Tolerance mm : +- 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
Start of delivery mark
Tolerance : +- 0.50
Check
tolerance °NW : +- 0.75
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700
Rack travel in mm : 13.70
Tolerance mm : +- 0.10
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : + 3.0

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 450

Rack travel in mm : 5.75

Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Spread
Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0
Spread
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 97.0
tolerance degree : + 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1095
rack travel mm : 11.10

Rated speed rpm : 1165
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

Rated speed rpm : 1096
rack travel mm : 11.10

Rated speed rpm : 1166
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

Rated speed rpm : 1097
rack travel mm : 11.10

Rated speed rpm : 1167
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

Rated speed rpm : 1098
rack travel mm : 11.10

Rated speed rpm : 1168
Tolerance 1/min : + 5

rack travel mm : 4.00
rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

Rated speed rpm : 1099
rack travel mm : 11.10

Rated speed rpm : 1169
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

Rated speed rpm : 1100
rack travel mm : 11.10

Rated speed rpm : 1170
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 78.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 450
rack travel mm : 5.75
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 585
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.70
Tolerance mm : + 0.10

Rated speed rpm : 500
rack travel mm : 13.75
Tolerance mm : + 0.10

Rated speed rpm : 1050

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rack travel mm : 11.20
Tolerance mm : + 0.05
Rated speed rpm : 1050
rack travel mm : 12.50
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.75
Tolerance mm : + 0.10

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.75
Tolerance mm : + 0.05

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 650
rack travel mm : 12.65
Tolerance mm : + 0.05

Pressure hPa : 450
rack travel mm : 11.10
Tolerance mm : + 0.20

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 80.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : + 0.75

Del. quantity
cm³/1000 strokes : 164.0
Tolerance
cm³/1000 strokes : ± 8.0
Check tolerance
cm³/1000s. : ± 11.0

LOW IDLE

Rated speed rpm : 450
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000s. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000s. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.04.97
Test oil : ISO 4113

Combination No. : 0 402 744 806

Injection pump
Pump designation : PES4P120A32ORS7431
EP type number : 0 412 724 805

Governor
Governor design. : RQV325...1500PA1333
: 1K
Governor no. : 0 421 815 555

Cust. part No. : 3393633

Customer-spec. information

Customer : CDC
Motor : 4BTA-A
Power KW : 179.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Start of delivery blocking

*NW after s.o.d. : 11.00
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1500

Rack travel in mm : 15.00
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 201.5

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 325

Rack travel in mm : 8.10
Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 26.5

Tolerance
cm³/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : +- 5.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1555
guide sleeve
travel mm : 9.02
Tolerance mm : +- 0.15

Rated speed rpm : 325
guide sleeve
travel mm : 1.21
Tolerance mm : +- 0.20

Rated speed rpm : 1007
guide sleeve
travel mm : 5.41
Tolerance mm : +- 0.25

Rated speed rpm : 560
guide sleeve
travel mm : 3.15
Tolerance mm : +- 0.25

Rated speed rpm : 1970

guide sleeve
travel mm : 13.50
Tolerance mm : +- 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1500

Aneroid pressure
hPa : 900

Del. quantity
cm³/1000 strokes : 201.5

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 14.00
Rated speed rpm : 1555
Tolerance 1/min : +- 5

rack travel mm : 5.50
Rated speed rpm : 1710
Tolerance 1/min : +- 15

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1800

LOW IDLE

control lever
position degree : 79.0
tolerance degree : +- 4.0

Control lever difference
Grad : 39.0
tolerance degree : +- 6.0

Testing:

Rated speed rpm : 325

rack travel mm : 8.10
Tolerance mm : + 0.10
Rated speed rpm : 275
CRT mm min. : > 8.80
Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1500
rack travel mm : 15.00
Tolerance mm : + 0.05
Rated speed rpm : 1100
rack travel mm : 14.70
Tolerance mm : + 0.20
Rated speed rpm : 750
rack travel mm : 13.90
Tolerance mm : + 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1500
Pressure hPa : -
Pressure hPa : -
Rated speed rpm : 750
rack travel mm : 12.20
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 1500
Pressure hPa : 570
rack travel mm : 13.40
Tolerance mm : + 0.20
Pressure hPa : 500
rack travel mm : 12.90
Tolerance mm : + 0.20

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 1100

Del. quantity
cm³/1000 strokes : 189.5
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 126.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.60
Tolerance mm : + 0.50
Del. quantity
cm³/1000 strokes : 122.0
Tolerance
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000S. : + 25.0

LOW IDLE

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 26.5
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 5.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.03.97
Test oil : ISO 4113

Combination No. : 0 400 075 925Y

Injection pump
Pump designation : PES5M55C32ORS201
EP type number : 0 410 055 972Y

Governor
Governor design. : RSF350/2500M56-13
Governor no. : 0 420 021 171

Cust. part No. :

Customer spec. information
Customer : MB-PKW
Motor : OM605
Power KW : 83.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde
assembly : 1 688 901 111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

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REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 1.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288

Start of delivery blocking

*NW after s.o.d. : 16.50
Tolerance : ± 0.20
Check
tolerance *NW : ± 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 12.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 37.0

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 1.5

Spread

Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0

Rated speed rpm : 350

Rack travel in mm : 7.40
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 8.5
Tolerance
cm³/1000 strokes : ± 0.5

Spreed
Tolerance
cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.25
Tolerance mm : ± 0.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
Ref. pressure
ALDA / ADA hPa : 1100
Del. quantity
cm³/1000 strokes : 37.0
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 1.5
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

RATED SPEED

Tolerance mm : ± 0.30

Rated speed rpm : 3150
rack travel mm : 0.50
Tolerance mm : ± 0.50

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1400

CRT mm max. : 1.95

LOW IDLE

Setting point w/out bumper spring
Rated speed rpm : 350
rack travel mm : 7.40

SET IDLE AUXILIARY SPRING

Rated speed rpm : 475
rack travel mm : 5.40
Tolerance mm : ± 0.10

Load pick-up

Rated speed rpm : 1400

CRT mm max. : 1.95

rack travel mm : 7.40
Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 12.75
Tolerance mm : ± 0.05

Rated speed rpm : 2300
rack travel mm : 12.30
Tolerance mm : ± 0.15

Rated speed rpm : 2500
rack travel mm : 11.90
Tolerance mm : ± 0.15

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1400
Ref. pressure
ALDA / ADA hPa : 940
rack travel mm : -0.10
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 1400
Ref. pressure
ALDA / ADA hPa : 900
rack travel mm : -0.40
Tolerance mm : ± 0.10

Ref. pressure
ALDA / ADA hPa : 750
rack travel mm : -1.50
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 2300
Del. quantity
cm³/1000 strokes : 39.3
Tolerance
cm³/1000 strokes : ± 0.8
Check tolerance
cm³/1000S. : ± 1.8
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 2500
Spreed
Del. quantity
cm³/1000 strokes : 38.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 2.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.0

HIGH IDLE

Ref. pressure
ALDA / ADA hPa : 1100
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 14.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.60
Tolerance mm : ± 1.50

M01

Del. quantity
cm³/1000 strokes : 55.0
Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 6.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 9.5
Check tolerance
cm³/1000S. : ± 2.3
Spreed
Check tolerance
cm³/1000S. : 1.5

control lever
position degree : > 49.00

control lever
position degree : < 46.50

SETTING PNEUMATIC FAST IDLE (PLA) (PLA) POSITION

Rated speed rpm : 400
Rack travel in mm : 8.25
Tolerance mm : ± 0.70
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : ± 3.5
Check tolerance
cm³/1000S. : ± 4.5
Vacuum hPa : 450.0

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 350

Vacuum hPa : -450.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.04.97
Test oil : ISO 4113

Combination No. : 0 401 846 913

Injection pump
Pump designation : PE6P110A720R3243
EP type number : 0 411 816 770

Governor
Governor design. : RQV250...1100PA413
Governor no. : 0 421 813 811

Cust. part No. :

Customer-spec. information
Customer : HAEP
Motor : WD615.68
Power KW : 206.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

M03

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 184.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 250

Rack travel in mm : 4.00
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spread

Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1145
guide sleeve
travel mm : 8.40
Tolerance mm : + 0.10

Rated speed rpm : 250
guide sleeve
travel mm : 1.10
Tolerance mm : + 0.10

Rated speed rpm : 700
guide sleeve
travel mm : 4.70
Tolerance mm : + 0.25

Rated speed rpm : 350
guide sleeve
travel mm : 2.00
Tolerance mm : + 0.25

Rated speed rpm : 1250

guide sleeve
travel mm : 9.70
Tolerance mm : + 0.25

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1200

Rack travel in mm : 12.70
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 184.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 106.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.70
Rated speed rpm : 1145
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1255
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 72.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 4.00
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 5.50

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 13.75
Tolerance mm : ± 0.05

Rated speed rpm : 700
rack travel mm : 13.75
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.75
Tolerance mm : ± 0.05

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.05
Tolerance mm : ± 0.15

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 375
rack travel mm : 11.00
Tolerance mm : ± 0.10

Pressure hPa : 630
rack travel mm : 12.95
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : > 100

Rated speed rpm : < 170

Check
speed 1/min : > 80

Check
speed 1/min : < 190

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 195.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 245.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 250
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.5

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.04.97
Test oil : ISO 4113

Combination No. : 0 401 848 828

Injection pump
Pump designation : PE8P120A520/4LS3850
EP type number : 0 411 828 723

Governor
Governor design. : RQ300/900PA1230
Governor no. : 0 421 801 792

Cust. part No. :

Customer-spec. information
Customer : DHI
Motor : D2848LE

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 8- 7- 2- 6- 3
 : - 4- 1

Phasing : 0-45-90-135-180
 : -270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark
Barrel no. : 8

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 12.20
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 215.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

Rated speed rpm : 300

Rack travel in mm : 7.40
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 42.0
Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 932
guide sleeve
travel mm : 6.37
Tolerance mm : + 0.10

Rated speed rpm : 300
guide sleeve
travel mm : 1.44
Tolerance mm : + 0.10

Rated speed rpm : 880
guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 433
guide sleeve
travel mm : 4.94
Tolerance mm : + 0.10

Rated speed rpm : 510
guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 1050
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 215.0
Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

CONTROL LEVER

control lever
position degree : 32.0
tolerance degree : + 4.0

control lever
position degree : 94.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.90
Rated speed rpm : 925
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 970
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1100

LOW IDLE

control lever
position degree : 75.0
tolerance degree : ± 4.0

control lever
position degree : 13.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 7.40
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 420
Tolerance 1/min : ± 20

Rated speed rpm : 200

CRT mm min. : > 9.80

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 12.20
Tolerance mm : ± 0.05

Rated speed rpm : 650
rack travel mm : 12.20
Tolerance mm : ± 0.10

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80

Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 218.0
Tolerance
cm³/1000 strokes : ± 3.0

M09

Check tolerance
cm³/1000s. : ± 6.0

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000s. : ± 24.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 42.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000s. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.04.97
Test oil : ISO 4113
Combination No. : 0 402 046 832
Injection pump
Pump designation : PES6P110A72ORS3104
EP type number : 0 412 C16 712
Governor
Governor design. : RQV350...1100PA850
Governor no. : 0 421 813 975
Cust. part No. : 04187477KY0142-17

Customer-spec. information

Customer : KHD
Motor : BF6L513RC

TEST BENCH REQUIREMENTS

Inlet line : 4.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 025
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0
x inside diameter : 1.5

M10

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 6- 2- 4- 1- 5-
: 3
Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50
Start of delivery mark
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Barrel no. : 6

BASIC SETTING

Rated speed rpm : 1100
Rack travel in mm : 13.95
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 164.0
Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 350

Rack travel in mm : 7.90
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + 2.5
Check tolerance
cm³/1000S. : + 5.0
Spread
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1160
guide sleeve
travel mm : 8.70
Tolerance mm : + 0.10

Rated speed rpm : 350
guide sleeve
travel mm : 1.20
Tolerance mm : + 0.10

Rated speed rpm : 410
guide sleeve
travel mm : 2.90
Tolerance mm : + 0.30

Rated speed rpm : 590
guide sleeve
travel mm : 4.20
Tolerance mm : + 0.30

Rated speed rpm : 1215
guide sleeve
travel mm : 10.00
Tolerance mm : + 0.20

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1140

Rack travel in mm : 16.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 164.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 120.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 12.90
Rated speed rpm : 1135
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1205
Tolerance 1/min : + 15

rack travel mm : 0.70
Tolerance mm : + 0.70
Rated speed rpm : 1310

LOW IDLE

control lever
position degree : 88.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 7.90
Tolerance mm : ± 0.10

Rated speed rpm : 100
CRT mm min. : > 9.50
Rated speed rpm : 435

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 13.95
Tolerance mm : ± 0.05

Rated speed rpm : 700
rack travel mm : 13.95
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 13.95
Tolerance mm : ± 0.05

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 12.40
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 370
rack travel mm : 12.80
Tolerance mm : ± 0.10

Pressure hPa : 450
rack travel mm : 13.45
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 270

Check speed 1/min : > 80

Check speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 900
Rated speed rpm : 700
Del. quantity cm³/1000 strokes : 164.0
Tolerance cm³/1000 strokes : ± 2.0
Check tolerance cm³/1000S. : ± 5.0
Spreed Tolerance cm³/1000 strokes : 6.0
Check tolerance cm³/1000S. : 9.0

Aneroid pressure hPa : -
Rated speed rpm : 450
Del. quantity cm³/1000 strokes : 124.0
Tolerance cm³/1000 strokes : ± 1.0
Check tolerance cm³/1000S. : ± 4.0
Spreed Tolerance cm³/1000 strokes : 4.0
Check tolerance cm³/1000S. : 7.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity cm³/1000 strokes : 185.0
Tolerance cm³/1000 strokes : ± 15.0
Check tolerance cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 350
Del. quantity cm³/1000 strokes : 19.0
Tolerance cm³/1000 strokes : ± 2.5
Check tolerance cm³/1000S. : ± 5.0

Speed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.04.97
Test oil : ISO 4113

Combination No. : 0 402 066 706

Injection pump
Pump designation : PES6P120A12ORS3358
EP type number : 0 412 026 784

Governor
Governor design. : RSV475...1250P2A613
: 1
Governor no. : 0 421 833 505

Cust. part No. : 3927357

Customer-spec. information
Customer : CDC
Motor : 6BTA-590 ELITE
Power KW : 138.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery blocking

*NW after s.o.d. : 7.75
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.30
Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	: 140.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 3.0
Spreed	
Tolerance cm ³ /1000 strokes	: 4.0
Check tolerance cm ³ /1000S.	: 7.5

Rated speed rpm	: 475
Rack travel in mm	: 5.40
Tolerance mm	: ± 0.10
Del. quantity cm ³ /1000 strokes	: 21.0
Tolerance cm ³ /1000 strokes	: ± 2.0
Check tolerance cm ³ /1000S.	: ± 4.5
Spreed	
Tolerance cm ³ /1000 strokes	: 6.0
Check tolerance cm ³ /1000S.	: 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	: - 3
Rated speed rpm	: 800
Rack travel in mm	: 0.50
Tolerance mm	: ± 0.20
governor spring pre-tension click setting x	: 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1250
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M15

Aneroid pressure hPa	: 1500
Del. quantity cm ³ /1000 strokes	: 140.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 3.0
Spreed	
Tolerance cm ³ /1000 strokes	: 4.0
Check tolerance cm ³ /1000S.	: 7.5

CONTROL LEVER

control lever position degree	: 107.0
tolerance degree	: ± 4.0

RATED SPEED

rack travel mm	: 10.30
Rated speed rpm	: 1295
Tolerance 1/min	: ± 5

rack travel mm	: 4.00
Rated speed rpm	: 1365
Tolerance 1/min	: ± 15

rack travel mm	: 0.85
Tolerance mm	: ± 0.55
Rated speed rpm	: 1500

rack travel mm	: 4.00
Rated speed rpm	: 1375

LOW IDLE

control lever position degree	: 83.0
tolerance degree	: ± 4.0

Setting point w/out bumper spring

Rated speed rpm	: 475
rack travel mm	: 4.90
Tolerance mm	: ± 0.10

Testing:

Rated speed rpm	: 475
rack travel mm	: 5.40
Tolerance mm	: ± 0.10

rack travel mm : 2.00
Rated speed rpm : 595
Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 11.30
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 11.30
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 11.30
Tolerance mm : ± 0.05

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.00
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 10.75
Tolerance mm : ± 0.20

Pressure hPa : 560
rack travel mm : 9.55
Tolerance mm : ± 0.05

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 157.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 97.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : ± 0.75
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 25.0

LOW IDLE

Rated speed rpm : 475
Del. quantity
cm³/1000 strokes : 21.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.04.97
Test oil : ISO 4113
Combination No. : 0 402 066 711
Injection pump
Pump designation : PES6P120A12DRS3358
EP type number : 0 412 026 784
Governor
Governor design. : RSV475...1100P2A661
Governor no. : 0 421 833 581
Cust. part No. : 3283574

Customer-spec. information
Customer : CUMMINS
Motor : 6BTAA ELITE
Power KW : 139.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 095
Inlet press. bar : 2.0
Overflow quantity min. l/h : 100
Tolerance l/h : ± 20.0
Test nozzle holder assembly : 1 688 901 103
Opening pressure bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 089
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check tolerance *NW : ± 0.50
Start of delivery blocking
*NW after s.o.d. : 6.75
Tolerance : ± 0.10
Check tolerance *NW : ± 0.75
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.90
 Tolerance mm : + 0.05

Del. quantity
 cm³/1000 strokes : 180.0

Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
 cm³/1000S. : + 3.0

Spread

Tolerance
 cm³/1000 strokes : 4.0

Check tolerance
 cm³/1000S. : 7.5

Rated speed rpm : 475

Rack travel in mm : 7.20
 Tolerance mm : + 0.10

Del. quantity
 cm³/1000 strokes : 60.0

Tolerance
 cm³/1000 strokes : + 2.0

Check tolerance
 cm³/1000S. : + 4.5

Spread

Tolerance
 cm³/1000 strokes : 6.0

Check tolerance
 cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800

Rack travel in mm : 0.50
 Tolerance mm : + 0.20

governor spring
 pre-tension
 click setting x : 3.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
 Aneroid pressure
 hPa : 1600

Del. quantity
 cm³/1000 strokes : 180.0

Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
 cm³/1000S. : + 3.0

Spread

Tolerance
 cm³/1000 strokes : 4.0

Check tolerance
 cm³/1000S. : 7.5

CONTROL LEVER

control lever
 position degree : 102.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.90
 Rated speed rpm : 1145
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1260
 Tolerance 1/min : + 15

rack travel mm : 0.85
 Tolerance mm : + 0.55
 Rated speed rpm : 1400

rack travel mm : 4.00
 Rated speed rpm : 1280

LOW IDLE

control lever
 position degree : 84.0
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 475
 rack travel mm : 6.70
 Tolerance mm : + 0.10

Testing:

Rated speed rpm : 475
rack travel mm : 7.20
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 645
Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.90
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 12.90
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1600
rack travel mm : 12.90
Tolerance mm : ± 0.05

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 8.60
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 11.10
Tolerance mm : ± 0.20

Pressure hPa : 560
rack travel mm : 9.60
Tolerance mm : ± 0.05

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1600
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 191.0

Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Spread
Tolerance
cm³/1000 strokes : 12.0
Check tolerance
cm³/1000S. : 16.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 90.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : ± 0.75
Del. quantity
cm³/1000 strokes : 175.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 25.0

LOW IDLE

Rated speed rpm : 475
Del. quantity
cm³/1000 strokes : 60.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.04.97
Test oil : ISO 4113

Combination No. : 0 402 076 801

Injection pump
Pump designation : PES6P120A132C/5RS337
: 2Y
EP type number : 0 412 026 793

Governor
Governor design. : RSV350...1050P1A641
Governor no. : 0 421 833 553

Cust. part No. : 1382923

Customer-spec. information
Customer : SCANIA
Motor : DSI1172A,-C1157A

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration damper
(RoBo diaphragm) : 3.1

Test oil inlet temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder assembly : 1 688 901 104

Opening pressure bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check tolerance °NW : ± 0.50

Start of delivery mark
Tolerance : ± 0.10
Check tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 16.75
Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	: 263.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 4.0
Spreed	
Tolerance cm ³ /1000 strokes	: 8.0
Check tolerance cm ³ /1000S.	: 12.0

Rack travel in mm	: 6.00
Tolerance mm	: ± 0.20
Del. quantity cm ³ /1000 strokes	: 20.0
Tolerance cm ³ /1000 strokes	: ± 4.0
Check tolerance cm ³ /1000S.	: ± 6.0
Spreed	
Tolerance cm ³ /1000 strokes	: 5.0
Check tolerance cm ³ /1000S.	: 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	: - 3
Rated speed rpm	: 800

Rack travel in mm	: 0.50
Tolerance mm	: ± 0.20

governor spring pre-tension click setting x	: 2.00
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FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 700
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Aneroid pressure hPa	: 1500
Del. quantity cm ³ /1000 strokes	: 263.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 4.0
Spreed	
Tolerance cm ³ /1000 strokes	: 8.0
Check tolerance cm ³ /1000S.	: 12.0

CONTROL LEVER

control lever position degree	: 33.0
tolerance degree	: ± 4.0

control lever position degree	: 83.0
tolerance degree	: ± 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm	: 750
rack travel mm	: 15.70

Rated speed rpm	: 788
Tolerance 1/min	: ± 4
rack travel mm	: 4.00

rack travel mm	: 0.85
Tolerance mm	: ± 0.55
Rated speed rpm	: 850

Rated speed rpm	: 751
rack travel mm	: 15.70

Rated speed rpm	: 789
Tolerance 1/min	: ± 4
rack travel mm	: 4.00

rack travel mm	: 0.85
Tolerance mm	: ± 0.55
Rated speed rpm	: 850

Rated speed rpm	: 752
rack travel mm	: 15.70

Rated speed rpm	: 790
Tolerance 1/min	: ± 4
rack travel mm	: 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 850

Rated speed rpm : 753
rack travel mm : 15.70

Rated speed rpm : 791
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 850

Rated speed rpm : 754
rack travel mm : 15.70

Rated speed rpm : 792
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 850

Rated speed rpm : 755
rack travel mm : 15.70

Rated speed rpm : 793
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 850

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 16.75
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 16.75
Tolerance mm : + 0.05

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 13.50
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 295
rack travel mm : 14.30
Tolerance mm : + 0.20

Pressure hPa : 640
rack travel mm : 16.00
Tolerance mm : + 0.05

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 188.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.50
Tolerance mm : + 0.20
Del. quantity
cm³/1000 strokes : 140.0
Tolerance
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000S. : + 24.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.04.97
Test oil : ISO 4113

Combination No. : 0 402 076 816

Injection pump
Pump designation : FES6P120A720RS3340
EP type number : 0 412 026 773

Governor
Governor design. : RSV650...1100P8A566
: 5
Governor no. : 0 421 833 601

Cust. part No. :

Customer-spec. information
Customer : NH
Power kW : 177.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 120
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery blocking

Check
tolerance °NW : ± 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1025

Rack travel in mm : 11.45
 Tolerance mm : + 0.05

Del. quantity
 cm3/1000 strokes : 159.0

Tolerance
 cm3/1000 strokes : + 1.0

Check tolerance
 cm3/1000S. : + 6.0

Speed

Tolerance
 cm3/1000 strokes : 5.0

Check tolerance
 cm3/1000S. : 9.0

Rated speed rpm : 650

Rack travel in mm : 4.60
 Tolerance mm : +- 0.10
 Del. quantity
 cm3/1000 strokes : 23.0
 Tolerance
 cm3/1000 strokes : + 3.0
 Check tolerance
 cm3/1000S. : + 6.0

Speed
 Tolerance
 cm3/1000 strokes : 8.0
 Check tolerance
 cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800

Rack travel in mm : 0.50
 Tolerance mm : + 0.20

governor spring
 pre-tension
 click setting x : 2.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1025
 Aneroid pressure
 hPa : 1600
 Del. quantity
 cm3/1000 strokes : 159.0
 Tolerance
 cm3/1000 strokes : + 1.0
 Check tolerance
 cm3/1000S. : + 6.0

Speed
 Tolerance
 cm3/1000 strokes : 5.0
 Check tolerance
 cm3/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 91.0

RATED SPEED

rack travel mm : 4.00
 Rated speed rpm : 1100

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1067
 rack travel mm : 10.40

Rated speed rpm : 1097
 Tolerance 1/min : + 5
 rack travel mm : 4.00

rack travel mm : 0.85
 Tolerance mm : + 0.55
 Rated speed rpm : 1250

Rated speed rpm : 1068
 rack travel mm : 10.40

Rated speed rpm : 1098
 Tolerance 1/min : + 5
 rack travel mm : 4.00

rack travel mm : 0.85
 Tolerance mm : + 0.55

Rated speed rpm : 1069
 rack travel mm : 10.40

Rated speed rpm : 1099

Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55

Rated speed rpm : 1070
rack travel mm : 10.40

Rated speed rpm : 1100
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55

Rated speed rpm : 1071
rack travel mm : 10.40

Rated speed rpm : 1101
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55

Rated speed rpm : 1072
rack travel mm : 10.40

Rated speed rpm : 1102
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55

LOW IDLE

control lever
position degree : 74.0

Setting point w/out bumper spring

Rated speed rpm : 650
rack travel mm : 4.10
Tolerance mm : + 0.10

Testing:

Rated speed rpm : 650
rack travel mm : 4.60
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 700

TORQUE CONTROL

Rated speed rpm : 1025
rack travel mm : 11.45
Tolerance mm : + 0.05

Rated speed rpm : 800
rack travel mm : 12.30
Tolerance mm : + 0.10

Rated speed rpm : 700
rack travel mm : 12.35
Tolerance mm : + 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1600
rack travel mm : 12.30
Tolerance mm : + 0.15

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 7.80
Tolerance mm : + 0.15

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 1050
rack travel mm : 11.50
Tolerance mm : + 0.10

Start interlock

Rated speed rpm : > 100

Check
speed 1/min : > 80

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1600
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 185.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 86.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 140.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.04.97
Test oil : ISO 4113

Combination No. : 0 402 670 812

Injection pump
Pump designation : PE12P120A320LS7902
EP type number : 0 412 620 848

Governor
Governor design. : RSV350...1050POA662
Governor no. : 0 421 833 579

Cust. part No. : 027 074 4302

Customer-spec. information
Customer : MB-NFZ
Motor : OM 444 LA
Power KW : 448.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 077

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 12- 1- 5- 9- 8
 : - 4- 11- 10- 2
 : - 7

Phasing : 0-45-60-105-120
 : -180-225-240-285
 : -345
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 12

BASIC SETTING

Rated speed rpm : 1030

Rack travel in mm : 13.40
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 199.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 6.20
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1030
Aneroid pressure
hPa : 1250

Del. quantity
cm³/1000 strokes : 199.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 94.0
tolerance degree : + 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1070
rack travel mm : 13.50

Rated speed rpm : 1145
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1350

Rated speed rpm : 1071
rack travel mm : 13.50

Rated speed rpm : 1146
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55

Rated speed rpm : 1072
rack travel mm : 13.50

Rated speed rpm : 1147
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : +- 0.55

Rated speed rpm : 1073
rack travel mm : 13.50

Rated speed rpm : 1148
Tolerance 1/min : +- 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : +- 0.55

Rated speed rpm : 1074
rack travel mm : 13.50

Rated speed rpm : 1149
Tolerance 1/min : +- 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : +- 0.55
Rated speed rpm : 1350

Rated speed rpm : 1075
rack travel mm : 13.50

Rated speed rpm : 1150
Tolerance 1/min : +- 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : +- 0.55

LOW IDLE

control lever
position degree : 71.0
tolerance degree : +- 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 6.20
Tolerance mm : +- 0.10

rack travel mm : 2.00
Rated speed rpm : 405
Tolerance 1/min : +- 30

Rated speed rpm : 100

CRT mm min. : > 9.30

SET IDLE AUXILIARY SPRING

NO1

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1030
rack travel mm : 13.40
Tolerance mm : +- 0.05

Rated speed rpm : 800
rack travel mm : 13.40
Tolerance mm : +- 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1250
rack travel mm : 1.60
Tolerance mm : +- 0.20

Pressure hPa : -
Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 550
rack travel mm : 0.80
Tolerance mm : +- 0.10

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1250
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 200.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 162.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.50
Tolerance mm : ± 0.15
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.04.97
Test oil : ISO 4113

Combination No. : 0 402 676 825

Injection pump
Pump designation : PE6P120A32ORS7430
EP type number : 0 412 626 960

Governor
Governor design. : RSV300...850P1A614
Governor no. : 0 421 833 502

Cust. part No. : 11031231 P05 v.03/97

Customer-spec. information

Customer : VCE
Motor : TD 103 KAE
Power KW : 190.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration damper
(RoBo diaphragm) : 4.2

Test oil inlet temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity min. l/h : 300
Tolerance l/h : ± 20.0

Test nozzle holder assembly : 1 688 901 103

Opening pressure bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.25
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10

Rack travel in mm : 11.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 500

Rack travel in mm : 12.20
Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	: 306.0
Tolerance cm ³ /1000 strokes	: + 1.0
Check tolerance cm ³ /1000S.	: + 4.0
Spread	
Tolerance cm ³ /1000 strokes	: 7.0
Check tolerance cm ³ /1000S.	: 11.0

Rated speed rpm	: 325
Rack travel in mm	: 4.20
Tolerance mm	: + 0.10
Del. quantity cm ³ /1000 strokes	: 34.0
Tolerance cm ³ /1000 strokes	: + 3.0
Check tolerance cm ³ /1000S.	: + 6.0
Spread	
Tolerance cm ³ /1000 strokes	: 5.0
Check tolerance cm ³ /1000S.	: 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	: - 3
Rated speed rpm	: 800
Rack travel in mm	: 0.50
Tolerance mm	: + 0.20
governor spring pre-tension click setting x	: 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 500
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Aneroid pressure hPa	: 1500
Del. quantity cm ³ /1000 strokes	: 306.0
Tolerance cm ³ /1000 strokes	: + 1.0
Check tolerance cm ³ /1000S.	: + 4.0
Spread	
Tolerance cm ³ /1000 strokes	: 7.0
Check tolerance cm ³ /1000S.	: 11.0

CONTROL LEVER

control lever position degree	: 52.0
tolerance degree	: + 4.0

control lever position degree	: 102.0
tolerance degree	: + 4.0

RATED SPEED

rack travel mm	: 10.80
Rated speed rpm	: 875
Tolerance 1/min	: + 5

rack travel mm	: 4.00
Rated speed rpm	: 950
Tolerance 1/min	: + 15

rack travel mm	: 0.85
Tolerance mm	: + 0.55
Rated speed rpm	: 1100

LOW IDLE

control lever position degree	: 76.0
tolerance degree	: + 4.0

control lever position degree	: 26.0
tolerance degree	: + 4.0

Setting point w/out bumper spring

Rated speed rpm	: 325
rack travel mm	: 3.70
Tolerance mm	: + 0.10

Testing:

Rated speed rpm : 325
rack travel mm : 4.20
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 420
Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 500
rack travel mm : 12.20
Tolerance mm : ± 0.05

Rated speed rpm : 700
rack travel mm : 11.80
Tolerance mm : ± 0.10

Rated speed rpm : 570
rack travel mm : 12.00
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 12.50
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.20
Tolerance mm : ± 0.05

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.35
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 575
rack travel mm : 2.35
Tolerance mm : ± 0.20

Pressure hPa : 180
rack travel mm : 0.25
Tolerance mm : ± 0.05

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 700

Del. quantity
cm³/1000 strokes : 264.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 198.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

LOW IDLE

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 34.0

Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.04.97
Test oil : ISO 4113

Combination No. : 0 402 678 827

Injection pump
Pump designation : PE8P120A320LS7886
EP type number : 0 412 628 903

Governor
Governor design. : RSV550...850P0A574
Governor no. : 0 421 833 476

Cust. part No. : 0260741102

Customer-spec. information

Customer : MB-NFZ
Motor : OM442LA
Power KW : 329.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Overflow quantity min. l/h : 120
Tolerance l/h : ± 10.0

Test nozzle holder assembly : 1 688 901 105

Opening pressure bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8-7-2-6-3
: -4-1

Phasing : 0-45-90-135-180
: -270-315
Tolerance : ± 0.30
Check tolerance °NW : ± 0.50

Start of delivery mark
Tolerance : ± 0.10
Check tolerance °NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 830

Rack travel in mm : 15.40
 Tolerance mm : +- 0.05

Del. quantity
 cm³/1000 strokes : 264.0

Tolerance
 cm³/1000 strokes : +- 1.0

Check tolerance
 cm³/1000S. : +- 4.0

Speed

Tolerance
 cm³/1000 strokes : 6.0

Check tolerance
 cm³/1000S. : 9.0

Rated speed rpm : 550

Rack travel in mm : 3.90
 Tolerance mm : +- 0.10

Del. quantity
 cm³/1000 strokes : 19.0

Tolerance
 cm³/1000 strokes : +- 3.0

Check tolerance
 cm³/1000S. : +- 6.0

Speed

Tolerance
 cm³/1000 strokes : 6.0

Check tolerance
 cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800

Rack travel in mm : 0.50
 Tolerance mm : +- 0.20

governor spring
 pre-tension
 click setting x : 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 830
 Aneroid pressure
 hPa : 1200

Del. quantity
 cm³/1000 strokes : 264.0

Tolerance
 cm³/1000 strokes : +- 1.0

Check tolerance
 cm³/1000S. : +- 4.0

Speed

Tolerance
 cm³/1000 strokes : 6.0

Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 80.0
 tolerance degree : +- 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 870
 rack travel mm : 14.40

Rated speed rpm : 920
 Tolerance 1/min : +- 4
 rack travel mm : 4.00

rack travel mm : 0.85
 Tolerance mm : +- 0.55
 Rated speed rpm : 1050

Rated speed rpm : 871
 rack travel mm : 14.40

Rated speed rpm : 921
 Tolerance 1/min : +- 4
 rack travel mm : 4.00

rack travel mm : 0.85
 Tolerance mm : +- 0.55
 Rated speed rpm : 1050

Rated speed rpm : 872
 rack travel mm : 14.40

Rated speed rpm : 922
 Tolerance 1/min : +- 4
 rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1050

Rated speed rpm : 873
rack travel mm : 14.40

Rated speed rpm : 923
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1050

Rated speed rpm : 874
rack travel mm : 14.40

Rated speed rpm : 924
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1050

Rated speed rpm : 875
rack travel mm : 14.40

Rated speed rpm : 925
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1050

LOW IDLE

control lever
position degree : 66.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 550
rack travel mm : 3.90
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 560
Tolerance 1/min : + 30

Rated speed rpm : 100

N08

CRT mm min. : > 19.00

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 830
rack travel mm : 15.40
Tolerance mm : + 0.05

Rated speed rpm : 600
rack travel mm : 15.40
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 15.40
Tolerance mm : + 0.10

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.30
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 500
rack travel mm : 11.35
Tolerance mm : + 0.20

Pressure hPa : 710
rack travel mm : 13.30
Tolerance mm : + 0.20

Start interlock

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 283.0
Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : ± 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 275.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.04.97
Test oil : ISO 4113

Combination No. : 0 402 698 033

Injection pump
Pump designation : PE8H12J/320LS15
EP type number : 0 412 628 004

Governor
Governor design. : RE36
Governor no. : 0 421 890 369

Cust. part No. : 0250745602

Customer-spec. information
Customer : MB-NFZ
Motor : OM 442 LA

TEST BENCH REQUIREMENTS

Inlet line : 3.2 ELAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 7.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
 : - 4- 1

Phasing : 0-45-90-135-180
 : -270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 8

(B) POSITIONER TESTING
Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point (P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check tolerance mm : +/- 0.10

Check value (P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check tolerance mm : +/- 0.30

Setting point (M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check tolerance mm : +/- 0.10

Check value (M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check tolerance mm : +/- 0.30

Stop position

Uact V : Value with deenergised adjusting magnet and control rod in stop position.
CRT mm : 0.75
Tolerance mm : +/- 0.25
Check tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR (ALL P and R pumps not H and M pumps)

Test with control rod in stop position

Engine speed min-1: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check tolerance V : +/- 1.20

Engine speed min-1: 600
Difference Amplitude to Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 750
Uact V : 2.800
Prestroke solenoid Stroke mm : 7.40
Del. quantity cm3/1000 strokes : 345.0
Tolerance cm3/1000 strokes : +/- 2.0
Check tolerance cm3/1000S. : +/- 6.0
Speed Tolerance cm3/1000 strokes : 5.0
Check tolerance cm3/1000S. : 9.0

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 950
Uact V : 2.900
Prestroke solenoid Stroke mm : 8.00
Del. quantity cm3/1000 strokes : 335.0
Tolerance cm3/1000 strokes : +/- 3.0
Check tolerance cm3/1000S. : +/- 6.0

Rated speed rpm : 550
Uact V : 2.700
Prestroke solenoid Stroke mm : 9.50
Del. quantity cm3/1000 strokes : 354.0
Tolerance cm3/1000 strokes : +/- 3.0
Check tolerance cm3/1000S. : +/- 6.0

Rated speed rpm : 630
Uact V : 2.000
Prestroke solenoid
Stroke mm : 5.30
Del. quantity
cm³/1000 strokes : 205.0
Tolerance
cm³/1000 strokes : ± 2.5
Check tolerance
cm³/1000S. : ± 5.0

TEST POINT L1

Rated speed rpm : 300
Uact V : 1.500
Tolerance Volt : ± 0.060
Check tolerance
Volt : ± 0.060
Prestroke solenoid
Stroke mm : 8.00
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : ± 3.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 1.900
Prestroke solenoid
Stroke mm : 10.00
Del. quantity
cm³/1000 strokes : 113.0
Tolerance
cm³/1000 strokes : ± 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.04.97
Test oil : ISO 4113

Combination No. : 0 402 736 892

Injection pump
Pump designation : PES6P120A120RS7400
EP type number : 0 412 726 950

Governor
Governor design. : RQV350...1100PA1244
: 1K
Governor no. : 0 421 815 488

Cust. part No. : 3282610

Customer-spec. information

Customer : CUMMINS
Motor : 6CTAA
Power KW : 221.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 100
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.30
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery blocking

*NW after s.o.d. : 8.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 15.30

Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 209.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.40
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 25.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 5.0

Spread

Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1159
guide sleeve
travel mm : 10.28
Tolerance mm : + 0.15

Rated speed rpm : 350
guide sleeve
travel mm : 1.93
Tolerance mm : + 0.20

Rated speed rpm : 710
guide sleeve
travel mm : 5.80
Tolerance mm : + 0.25

Rated speed rpm : 430

guide sleeve
travel mm : 4.33
Tolerance mm : + 0.25

Rated speed rpm : 1380
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1200

Rack travel in mm : 14.30
Tolerance mm : + 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 209.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 66.0
tolerance degree : + 4.0

control lever
position degree : 120.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 14.30
Rated speed rpm : 1145
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1255
Tolerance 1/min : + 15

Check
speed 1/min : + 20

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 73.0
tolerance degree : ± 4.0

control lever
position degree : 20.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.40
Tolerance mm : ± 0.10

Rated speed rpm : 250

CRT mm min. : > 8.30

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 15.30
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 14.90
Tolerance mm : ± 0.10

Rated speed rpm : 900
rack travel mm : 15.25
Tolerance mm : ± 0.15

Rated speed rpm : 600
rack travel mm : 14.80
Tolerance mm : ± 0.15

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 1500
rack travel mm : 15.30

Tolerance mm : ± 0.05
Pressure hPa : -
Rated speed rpm : 1100
rack travel mm : 11.00
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 1100

Pressure hPa : 900
rack travel mm : 14.50
Tolerance mm : ± 0.20

Pressure hPa : 400
rack travel mm : 11.85
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 290

Check
speed 1/min : > 80
Check
speed 1/min : < 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 198.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 12.0
Check tolerance
cm³/1000S. : 16.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 111.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 195.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Spread
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 11.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.04.97
Test oil : ISO 4113

Combination No. : 0 402 736 893

Injection pump
Pump designation : PES6P120A120RS7400
EP type number : 0 412 726 950

Governor
Governor design. : RQV350...1100FA1244
: 2K
Governor no. : 0 421 815 489

Cust. part No. : 3282609

Customer-spec. information
Customer : CUMMINS
Motor : 6CTAA
Power kW : 206.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 125
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008
Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.30
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery blocking

*NW after s.o.d. : 8.00
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 15.50
 Tolerance mm : + 0.05

Del. quantity
 cm³/1000 strokes : 211.0

Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
 cm³/1000S. : + 4.0

Spread

Tolerance
 cm³/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.50
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 25.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 5.0
 Spread
 Tolerance
 cm³/1000 strokes : 7.0
 Check tolerance
 cm³/1000S. : 11.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1159
 guide sleeve
 travel mm : 10.28
 Tolerance mm : + 0.15

Rated speed rpm : 350
 guide sleeve
 travel mm : 1.93
 Tolerance mm : + 0.20

Rated speed rpm : 710
 guide sleeve
 travel mm : 5.79
 Tolerance mm : + 0.25

Rated speed rpm : 500
 guide sleeve
 travel mm : 4.70
 Tolerance mm : + 0.25

Rated speed rpm : 1380
 guide sleeve
 travel mm : 13.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1215

Rack travel in mm : 13.30
 Tolerance mm : + 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
 Aneroid pressure
 hPa : 1500
 Del. quantity
 cm³/1000 strokes : 211.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 66.0
 tolerance degree : + 4.0

control lever
 position degree : 122.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 14.50
 Rated speed rpm : 1145
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1260
 Tolerance 1/min : + 15

Check
speed 1/min : + 20
rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 73.0
tolerance degree : + 4.0

control lever
position degree : 20.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.50
Tolerance mm : + 0.10

Rated speed rpm : 250

CRT mm min. : > 8.60

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 15.50
Tolerance mm : + 0.05

Rated speed rpm : 650
rack travel mm : 15.00
Tolerance mm : + 0.10

Rated speed rpm : 900
rack travel mm : 15.40
Tolerance mm : + 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1050
Pressure hPa : 1500
rack travel mm : 15.50
Tolerance mm : + 0.05

Pressure hPa : -
Rated speed rpm : 1050
rack travel mm : 11.05
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 1050

Pressure hPa : 820
rack travel mm : 14.15
Tolerance mm : + 0.20

Pressure hPa : 420
rack travel mm : 12.10
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 280

Check
speed 1/min : > 80
Check
speed 1/min : < 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 197.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000s. : + 6.0
Speed
Tolerance
cm³/1000 strokes : 12.0
Check tolerance
cm³/1000s. : 16.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 111.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000s. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 20.50
Tolerance mm : + 0.50
Del. quantity
cm³/1000 strokes : 195.0
Tolerance
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000S. : + 24.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 5.0
Spreed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 11.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.04.97
Test oil : ISO 4113

Combination No. : 0 402 776 839

Injection pump
Pump designation : PES6P120A32ORS7437
EP type number : 0 412 726 970

Governor
Governor design. : RSV550...1000P1A678
Governor no. : 0 421 833 597

Cust. part No. : 836854748

Customer-spec. information

Customer : SISU
Motor : 645 DSIE
Power KW : 270.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 14.30
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 270.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
 cm³/1000S. : + 4.0

 Spreed
 Tolerance
 cm³/1000 strokes : 7.0

 Check tolerance
 cm³/1000S. : 10.0

Rated speed rpm : 550
 Rack travel in mm : 4.00
 Tolerance mm : + 0.20
 Del. quantity
 cm³/1000 strokes : 22.0
 Tolerance
 cm³/1000 strokes : + 2.5
 Check tolerance
 cm³/1000S. : + 5.0
 Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : + 0.20
 governor spring
 pre-tension
 click setting x : 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
 Aneroid pressure
 hPa : 2000
 Del. quantity
 cm³/1000 strokes : 270.0
 Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
 cm³/1000S. : + 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 7.0
 Check tolerance
 cm³/1000S. : 10.0

CONTROL LEVER

control lever
 position degree : 50.0
 tolerance degree : + 4.0

control lever
 position degree : 100.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 13.30
 Rated speed rpm : 1040
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1090
 Tolerance 1/min : + 15

rack travel mm : 0.80
 Tolerance mm : + 0.50
 Rated speed rpm : 1200

LOW IDLE

control lever
 position degree : 80.0
 tolerance degree : + 4.0

control lever
 position degree : 30.0
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 550
 rack travel mm : 3.50
 Tolerance mm : + 0.10

Testing:

Rated speed rpm : 550
 rack travel mm : 4.00
 Tolerance mm : + 0.20

rack travel mm : 2.00

Rated speed rpm : 610
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 14.30
Tolerance mm : + 0.05

Rated speed rpm : 1000
rack travel mm : 14.30
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 2000
rack travel mm : 14.30
Tolerance mm : + 0.05

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.70
Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 1410
rack travel mm : 3.10
Tolerance mm : + 0.20

Pressure hPa : 700
rack travel mm : 0.25
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 440

Check speed 1/min : > 80
Check speed 1/min : < 460

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 2000
Rated speed rpm : 1000

Del. quantity cm³/1000 strokes : 246.0
Tolerance cm³/1000 strokes : + 3.0
Check tolerance cm³/1000S. : + 6.0

Spread Tolerance cm³/1000 strokes : 10.0
Check tolerance cm³/1000S. : 14.0

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 177.0
Tolerance cm³/1000 strokes : + 1.0
Check tolerance cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + 0.50
Del. quantity cm³/1000 strokes : 238.0
Tolerance cm³/1000 strokes : + 15.0
Check tolerance cm³/1000S. : + 19.0

LOW IDLE

Rated speed rpm : 550
Del. quantity cm³/1000 strokes : 22.0
Tolerance cm³/1000 strokes : + 2.5
Check tolerance cm³/1000S. : + 5.0
Spread Tolerance cm³/1000 strokes : 5.0
Check tolerance cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.04.97
 Test oil : ISO 4113
 Combination No. : 0 403 446 333
 Injection pump
 Pump designation : PES6MW100/720RS1131
 : 1
 EP type number : 0 413 406 165
 Governor
 Governor design. : RQV300...1300MW151
 Governor no. : 0 420 083 333
 Cust. part No. : 0260747102

Customer-spec. information
 Customer : MB-NFZ
 Motor : OM 366 LA
 Power KW : 155.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
 Test oil inlet
 temp. °C : 40
 Tolerance °C : + 2.0
 Overflow valve : 1 419 992 198
 Inlet press. bar : 1.5
 Test nozzle holder
 assembly : 1 688 901 101
 Opening pressure
 bar : 208.5
 Tolerance bar : + 1.5
 Test lines : 1 680 750 089
 Outside diameter : 8.0

x inside diameter : 3.0
 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
 Tolerance bar : + 1.0
 Prestroke mm : 3.65
 Tolerance mm : + 0.05
 Check
 tolerance mm : + 0.10
 Rack travel in mm : 10.50
 Tolerance mm : + 1.50
 Firing order : 1- 5- 3- 6- 2-
 : 4
 Phasing : 0-60-120-180-240
 Tolerance : + 0.50
 Check
 tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1300
 Rack travel in mm : 13.15
 Tolerance mm : + 0.05
 Del. quantity
 cm³/1000 strokes : 100.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 3.0
 Speed

Tolerance
 cm³/1000 strokes : 3.5

Check tolerance
 cm³/1000S. : 6.0

Rated speed rpm : 300

Rack travel in mm : 6.50
 Tolerance mm : + 0.10

Del. quantity
 cm³/1000 strokes : 11.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5

Spread
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 5.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1355
 guide sleeve
 travel mm : 8.65
 Tolerance mm : + 0.15

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.37
 Tolerance mm : + 0.20

Rated speed rpm : 885
 guide sleeve
 travel mm : 5.01
 Tolerance mm : + 0.25

Rated speed rpm : 490
 guide sleeve
 travel mm : 2.86
 Tolerance mm : + 0.25

Rated speed rpm : 1610
 guide sleeve
 travel mm : 11.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
 position degree : 116
 Rated speed rpm : 1440

Rack travel in mm : 10.00
 Tolerance mm : + 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 1000

Del. quantity
 cm³/1000 strokes : 100.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 3.0

Spread
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 6.0

CONTROL LEVER

control lever
 position degree : 113.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.10
 Rated speed rpm : 1345
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1460
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1550

LOW IDLE

control lever
 position degree : 69.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300

rack travel mm : 6.50
Tolerance mm : + 0.10
Rated speed rpm : 200
CRT mm min. : > 8.00

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.15
Tolerance mm : + 0.05

Rated speed rpm : 600
rack travel mm : 13.15
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 13.15
Tolerance mm : + 0.10

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 350
rack travel mm : 1.75
Tolerance mm : + 0.15

Pressure hPa : 200
rack travel mm : 0.75
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 250

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 86.0
Tolerance
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 42.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : + 5.0
Check tolerance
cm³/1000S. : + 8.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.0

End of test specification sheet